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APRIL 1, 1908.

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THE MANUFACTURERS SCORE.

THE rubber manufacturers in a very important branch of the industry have scored a point recently in connection with a disputed question that deserves more than passing notice, particularly because the decision that has been reached is right and just. The question of the standardization of rubber covered wires and cords for electric light and power circuits has received much attention at the hands of the National Board of Fire Underwriters and other associations to whose members it is of special importance that every possible safeguard should be established against losses by fire. The work that has been done by the central agency through which these various association cooperate, in regard both to establishing and maintaining a high standard in rubber covered wire production, has been mentioned at some length in the pages of this journal.

Of course no reputable firm, either of manufacturers or contractors, has had any desire for other than high standards of material and work, but so long as no definite standards were recognized, and in view of the keen competition at all times prevailing, it is undeniable that not a little wiring has been done that was far from creditable to the trade. The efforts which

crystallized in the formation of the Wire Inspection Bureau, and in its subsequent development, have brought about an improved state of affairs, to attain which the insulated wire manufacturers have worked no less earnestly than the others in interest.

But questions arose of an inconvenient nature, resulting in a conference during the past month between a committee appointed by the several manufacturers of approved rubber covered wire and representatives of the fire underwriters and other bodies. The point in their discussion which is of special interest from our standpoint is thus stated in the official report:

On behalf of the manufacturers, it was explained that it would not be satisfactory to many or all of them to admit into their works inspectors exclusively under the employ of the Underwriters' Laboratories or any other organization in the management or control of which they have no voice.

On the other hand, the inspection service stated that it had no desire to force their system upon the manufacturers, and that they would go no further than to offer such service as the manufacturers might desire. The final decision was that "the manufacturers themselves can supervise the inspection and labeling of wire, and that their united indorsement of any system would answer every purpose."

It is understood that the Laboratories will continue to approve makes of wire that come up to certain requirements, and to make the fact public. But the manufacturer is to be left free to make his own goods in his own way—the only proper basis for the conduct of any industry.

THE COST OF AMAZON RUBBER.

NO question in connection with crude rubber is of more commanding interest to-day than the probable effect of a large production from plantations upon ultimate prices of staple rubber grades. Five years ago such a question would not have had respectful attention outside the then narrow circle of rubber planters. The rapid increase in the output of rubber plantations of late, however, has made a marked impression even in Stock Exchange circles in London, in which city the leading financial journals give relatively as much attention to rubber as to railway or mining interests.

It may be said, of course, that rubber planting commands so much attention because it is the newest marked success with which investing interests have been concerned. But it has been proved that rubber can be produced under cultivation with as much certainty as wheat or cotton, and the fact that the forest product in recent years has been sold to factories at as much as \$3,000 per ton, while steel has been produced at not above \$3.30 for the same weight, has rendered most alluring the possibility of cheapening the cost of production of rubber without wholly upsetting the long maintained price levels. In fact, it has been pos-

sible to draw a most spectacular picture of the near future of rubber planting profits.

But just as a thousand or so tons of cultivated rubber began to be produced, along with, say, 70,000 tons a year of the forest product, an unexampled drop in prices occurred, and investors in plantations naturally have been disturbed. The exact cause of the drop remains yet to be understood; up to date nobody seems to be able fully to understand what sent rubber up or down, or "where prices are made." At every meeting of a planters' association in Ceylon it is gravely stated that the lower prices to-day are due to something having happened in America.

But that is because the planters in Ceylon are British. Ten years ago, or five years ago, whenever crude rubber prices went up, London and Liverpool dealers told their customers it was because something had happened "in America." But all the while every American who cared a snap of his fingers about the situation blamed everything upon England or some other country, and at this moment the same thing is true—in every market it is said that rubber has gone up or down because of conditions somewhere else. And there you are.

The United States has not ceased to buy rubber. Look at these figures, showing the government statement of the quantity and value of rubber—total and average per pound—imported into the United States during ten calendar years past:

YEAR.	POUNDS.	VALUE	PER POUND.
1898	44,236,070	\$25,937,108	56 cents.
1899	54,408,495	34,219,019	63 cents.
1900	49,337,183	28,577,789	58 cents.
1901	55,152,810	28,120,218	51 cents.
1902	50,851,257	25,158,591	49 cents.
1903	55,744,120	35,152,642	63 cents.
1904	61,889,758	43,784,297	71 cents.
1905	64,147,701	48,517,906	76 cents.
1906	67,907,251	53,391,137	79 cents.
1907	68,625,647	49,797,437	73 cents.

New York is not, like some other rubber markets, an international clearing house for rubber; for the most part whatever supplies come into this port go promptly into the hands of home manufacturers. The recent decline in prices does not, therefore, depend alone upon conditions on this side the Atlantic any more than upon conditions on the other side, or in regions less discussed in this connection. It will be seen from the same table that prices have fluctuated, without regard to the volume of rubber imports (practically the volume of rubber consumption) into the United States.

But this article is not intended as an apology for, or a defense of, New York, and still less as an explanation of the influences which cause rubber to sell now higher and now lower. The immediate pressing question in Ceylon and other planting regions is: At what point of decline will the Amazon regions cease to export rubber, and thereby leave the prospective planting interest in command of the field?

Our opinion is that the Amazon river will carry rub-

ber to market for very many years after every rubber planter now alive has been gathered to his fathers. Nobody knows what it costs to produce *Hevea* rubber in South America, unless it be an exceptional owner of a *seringal* here and there who troubles himself to keep books. And the Brazilian who admits to himself that the sun rises or sets outside his country, or that good rubber can be produced elsewhere, is no patriot! Do not the cotton planters of the United States rest under the same delusion regarding their own special product? What is the use, they would say, of considering the possibility of competition, and planning how to meet it?

There are rubber manufacturers in the United States to-day who remember when fine "Pará" cost them only 25 cents [a shilling] a pound, and there never was any scarcity of raw material. Of course, with the growth of demand prices went up, which was natural, and the consumer did not complain. But it is impossible to fix a limit of price below which the Brazilians and their neighbors will not produce rubber. Whatever was true at an earlier date, most of the *seringueiros* of to-day have got to produce rubber, or starve. Their country as yet affords no other export staple—no other means of subsistence. The Ceylon planters whose enterprise fails can go "home," or somewhere else. But the Amazon rubber gatherer must gather rubber or die, and if the high prices of recent years which have amazed him and led him into extravagances and to feel that Amazonia had "the world in a sling" should disappear permanently, he would still gather rubber and manage to sustain life on the proceeds.

This is not written to discourage the rubber planter. The world will continue to use rubber more and more. The world as a whole is only on the threshold of using rubber as a general proposition. But it is idle as yet for a few bookkeepers to try to figure out what forest rubber "costs"—whether on the Amazon or on the Congo—and at what minimum of cost it will cease to be marketed. There are as shrewd business men on the Amazon as elsewhere, only they have not yet been forced to apply system to their accounting. When they are, the European shareholders in companies in the Far East must see to it that their directors are not worsted in the competition. Have we not seen millions of European capital invested in exploiting forest rubber in South America, and almost invariably at a loss? But the rubber output of the Amazon has gone on increasing year after year, and it is incredible that the people who have produced this great volume of exports have done so at a steady loss. So far the Brazilians as business men have not suffered by comparison with any competitors.

The real question is not, "At what low figures will Brazil stop producing rubber?" but "How cheaply can anybody else supply equally good rubber?"

THE VALUATION OF NEW RUBBERS.

WE have before us reports on three samples of rubber, from plants not known in the past as rubber producers, which have been appraised by a London rubber expert as worth respectively 1s. 6d., 2s. 4d., and 3s. 6d. per pound. The chemical analyses accompanying the estimates of values for these rubbers are understandable, and, having once been made by competent analysts, presumably will not have to be revised. But what is one to understand from the flat statement that a given specimen of rubber is worth 3s. 6d. a pound? All it means is that rubber of a given quality *ought* to bring such a price on the day of the appraisal, having reference to the market price of rubbers of known quality, such as the best Pará sorts.

At the date of this writing no grade of rubber, of any grade, is quoted in any market, other than in exceptional cases, at anything near 3s. 6d. [=85½ cents]. So far as we can make out from the reports on the new grades of rubber to which we have reference particularly, the idea of the appraiser is that, on the date of the report, the best of the samples was worth approximately 65 per cent. of the price quoted for the moment for fine hard Pará from South America. Then why not say so, without troubling to specify a precise market value for the new rubber? Dealing with the matter in this way, if the rubber chosen as a standard in the way of values is fine hard Pará worth \$1, the new rubber might be worth 65 cents; if Pará is worth only 65 cents, the new rubber may be quoted at 42¼ cents, and so on.

It happens that these reports by experts do not always soon become public property; in the case under review two years have elapsed since the samples of rubber had expert attention. We mention the matter here only to illustrate the lack of value of so many estimates of new rubbers. Manifestly it would be absurd to speak of a hitherto unknown rubber, and one as yet untested in factory practice, as having a specific value—say 3s. 6d.—at a time when no rubber in the market, no matter how well known or how important to the industry, brings any thing like so much.

What we would suggest is that the comparatively few experts in the field of appraising rubbers should come to an agreement as to a standard for valuations of crude rubber—say fine hard Pará—and that all estimates of the new sorts should be expressed in percentages, having reference to relative qualities. Then, in order to make the estimates of practical value, it would be necessary only to learn what the standard grade was bringing from day to day; whoever was interested could thus easily figure out what might be reasonable to expect as a price for the new sort.

Of course it must be understood that no new rubber "finds itself" in the market at once, but it counts for something if one is interested in exploiting rubber from *Cryptostegia grandiflora*, for example, and he can feel as-

sured that it compares thus and so with the produce of *Hevea Brasiliensis*. A rubber about so good is bound to find a market in time, if it can be produced in fairly uniform quality and in amounts worth considering.

RUBBER GATHERING AS A SPREE.

A WELL known English traveler and writer, Mr. A. H. Savage-Landor, has brought out a new book of African travel, some extracts from which, relating to the Congo Free State, have been compiled in a pamphlet, evidently under the inspiration of the king-sovereign of that very interesting country, as an apology for his much criticized administration. Some references to rubber in this pamphlet may be worth noticing here. The noted traveler writes:

I well remember Captain Bibolini sitting at his desk, with a pleasant smile always upon his lips, marking carefully each basket of rubber brought into the post by natives.

From what is to be read farther on it is apparent that all the smiling was done on Captain Bibolini's side of the desk, though why he smiled is not mentioned. The next detail relates to how trading is done with the natives:

Each man's name was registered, so that no mistake could occur, and payment in goods was at once handed over. Money was useless, and the natives would not accept it.

Whether anything else pleased the natives is not mentioned specifically, but we do learn from Mr. Savage-Landor that they do not smile while at the trading post. He says:

Hundreds of men sat down upon the ground with legs spread wide apart and crossed arms resting upon their knees. Their faces were expressionless and stupid, with a hint of cruelty in the vicious eyes.

What are they mad about? Was it that grown men are kept at play? Read next about their enforced idleness:

Each man had a basket of rubber before him. Every man, in the richer regions, must bring in three kilos (six pounds) of rubber a year—the only tax imposed upon them. This only means a few days' work a year for them—a work which requires no effort whatever.

Still it is a puzzle why all these hundreds of men with legs spread wide apart should look cruelly out of their vicious eyes. Is not life one grand sweet song for them? Read:

As they generally go *en masse* upon their rubber-collecting expeditions, they carry their entire families with them and look upon the whole thing as a great spree.

Here may be a hint. Gathering rubber may be a glorious "spree," but what a difference in the morning, when it is all over and they sit on the ground, looking at the smiling Captain Bibolini on the other side of the desk! Why weren't they allowed to continue spreeing?

There is space here for only one more extract:

Rubber has locally no value whatever among natives themselves. They have not yet risen to pneumatic motor-wheels nor to mackintoshes, galoshes, or rubber-soled tennis shoes. No use worth referring to is made by them of this valuable latex.

All of which might suggest to some people that the Congolese natives have not yet assimilated to the utmost the lessons of civilization which it has been the boasted pleasure of the royal philanthropist at Brussels to force upon them.

WE HAVE BEEN ASKED TO DISCUSS the question of amending the United States tariff laws as a step in increasing trade between the mainland and the Philippine islands. Not being in a position to legislate on the subject, we prefer to leave such discussion to those who are. We trust that commerce between the States and the islands may long continue to grow, but THE INDIA RUBBER WORLD has never been a believer in depending upon changes in the statute books as a means of building up trade. We do not depend upon congress to make trade for us at home; why should we abroad?

GUAYULE RUBBER NEWS.

IT is reported that a large guayule rubber factory is to be erected by the Big Bend Manufacturing Co., of San Antonio, Texas, at Alpine, Brewster county, in that state, on the line of the Southern Pacific railroad. The company referred to was incorporated under the laws of Delaware last year, for the purpose of contracting to exploit the guayule rubber on the school lands in Texas, under an act of the legislature which became effective on July 11, 1907. Bids for the privilege were opened on September 5, and the contract was awarded to the Big Bend company, of which James D. Crenshaw, a lawyer of San Antonio, Texas, is president. It was very definitely set forth in the act of the Texas legislature under which the school land guayule contract was awarded that the contractor should not be "a party to or a member of any trust, monopoly, or combination in restraint of trade." It is not on record, by the way, that the state of Texas has any guarantee that the Big Bend company is not hand in glove with the most pernicious of all "rubber trusts."

THE location of the new Texas factory is to be not far from Marathon, in the same county, where is the factory of the Texas Rubber Co., headed by Otto Koehler, of San Antonio, Texas, who is also president of the National Rubber Co., operating a guayule factory in Mexico. Mr. Koehler, by the way, has been referred to already as interested to an important extent in the Pará Recovery Co., whose plant at Bayonne, New Jersey, was reported in the last issue of this journal as having undergone a change of control.

THE Torreon *Enterprise* reports: "The force of men employed at the plant of the Continental-Mexican Rubber Co. has been increased and they are again running to full capacity both day and night. The force they are employing is again normal. Some time ago the company cut down its output and laid off a number of men. It was, however, given out at the time that the decrease was temporary, and due greatly to the fall in the price of crude rubber."

ADOLPH MEYER, who for some time has been at the head of the department for the purchase of guayule shrubs for the Continental-Mexican Rubber Co., whose plant is located at Torreon, has been made manager of the company's hacienda Cedros. This is the largest guayule property in the world, and the hacienda is devoted entirely to the production of guayule. Several botanists of note are employed there in growing the guayule plant from seeds and in transplanting the seedlings, and the general control of this experimental work will be turned over to Mr. Meyer.

F. EPHRAIM, formerly of San Francisco, California, and now of Torreon, Mexico, has filed charges against William Maganeu, as manager of the National Rubber Co., and others connected with that company, alleging infringement of patents granted to Ephraim covering processes for the utilization of guayule rubber.

A BRITISH VIEW OF SYNTHETIC RUBBER.

[FROM "THE FINANCIER," LONDON.]

TOUCHING the subject of synthetic rubber, we are still receiving letters from correspondents asking our opinion of this bugbear. Regular readers of *The Financier* cannot fail to be fully acquainted with our views on the subject, and it was hoped that we had disposed of the question—if not finally, at least for a considerable time to come—in our issue of January 24, in which we reproduced an article from THE INDIA RUBBER WORLD, which admirably summed up the whole question. That correspondent who asks our opinion of a synthetic rubber company, recently registered, with a capital of £100,000, of which 650

shares of £10 each have been issued, to carry on experiments, we can only refer to this article. It is quite possible that he might with greater profit put money into a scheme for extracting rubber from the earth, such as is indicated in the following story, culled from a Washington local paper, and reprinted in THE INDIA RUBBER WORLD. [The article last referred to appeared in the February issue of this journal—page 161.]

HODGMAN HYDEGRADE CRAVENETTES.

PROBABLY no other fabrics in the United States are as well known as the "Hydegrade," and no rainproofing process anywhere near reaches in reputation the Cravenette process, and furthermore, no manufacturer of waterproof clothing has a name that is more widely known than that of Hodgman. It is, therefore, of more than passing interest to know that A. G. Hyde & Sons, proprietors of the Hydegrade fabrics, have formed a close working alliance with the Summit Proofing Co., sole



licensees in America for the Cravenette waterp roofing process, the arrangement being that the latter company shall treat the Hydegrade fabrics with the Cravenette process to the exclusion of all other domestic cotton cloths resembling them. In addition to this, the Hodgman Rubber Co. (New York) have in turn formed a close working alliance with A. G. Hyde & Sons whereby they are to have the sole output of the Cravenetted Hydegrade fabrics, and are already putting on the market a wonderfully attractive line of spring designs.

The finish and sheen of these goods is equal to that of the best silk garments, while the wearing quality is superior. The goods cover new zephyr weights for men, women, misses, and children, made in the fashionable French *militaire* models, new motor coat models, semi fitting backs, English box backs, with cuffs, lapels, and pipings of contrasting colors. These garments are all tailor made, are exceptionally smart, in addition to being rainproof, dust proof and spot proof. They retail for from \$5 to \$10, and with the three warrants of quality—Hodgman, Hydegrade and Cravenette—on the label, are sure to find a ready welcome in the American market.

WITH regard to the projected international rubber exhibition, a prominent rubber manufacturer in England writes THE INDIA RUBBER WORLD: "As far as I can see it is more a question of exhibiting plantation rubber than the manufactured article, but I am not in a position to give you quite accurate information on this point, having heard very little of the proposed exhibition." In other words the world at large are interested only in seeing absolutely new developments in rubber in exhibitions, which is exactly the position that THE INDIA RUBBER WORLD took in the March issue.

ALTHOUGH the state of New Jersey values her roads so highly that she refuses to allow automobilists to use chains for the prevention of skidding, her present executive, Governor Fort, is sounding the right note when he proposes a general tire tax for all vehicles. He holds that it is unjust that automobilists should pay so large a proportion of the road tax; that all vehicles using the roads should be taxed, the amount depending upon the width and type of the tire. A law of this sort is needed everywhere and would very soon result in vastly better roads.

Rubber Gathering in Bolivia.

THE growing interest in the exploitation of Bolivia, and especially of india-rubber, which at present is one of the principal export staples in that country, suggests the presentation at this time of some views which appear on this and the following page. To-day a considerable portion of the rubber gathered in Bolivia finds its way through a mountain pass near the town of Sorata, to the Pacific port of Mollendo. The project-

the Andes, not far from Lake Titicaca, from the western coast of which a railway runs to Mollendo, on the Pacific coast. Sorata is on the line of the commercial route to northwestern Bolivia, and is a progressive and enterprising town in which living expenses are relatively cheap. It is a center for the contracting of laborers for the gathering of rubber, bark, coffee, etc., and for the distribution of provisions and merchandise to the inhabitants of the neighboring valleys. The town is distant from four to ten days, by mule or pack animal, from the rubber districts which, in portions of Larecaja province, are among the richest, in *Hevea* rubber, in the world.

A report on this region in the *Monthly Bulletin* of the International Bureau of the American Republic (Washington, February, 1908) says: "The number of rubber trees varies greatly in the different rubber producing centers. In some regions as many as 100 trees are found to the hectare [=2.471 acres], while in other places it is difficult to encounter a dozen rubber trees to the hectare. The largest number of the *Hevea Brasiliensis* grows on the slopes of the mountain ranges that receive the direct rays of the sun." The report indicates that various other rubber species exist in this region, but that only the *Hevea* has been

exploited, owing to the others being less valuable.



TAPPING A TREE.

[Use of the "machadine," preparatory to attaching a "tichuela" to catch the latex.]



CURING THE RUBBER.

[At the "humedero." Smoking the latex on a wooden paddle over a palm wood fire.]

ed railway around the falls of the Madeira, in order to facilitate access to the Amazon, and in which American capitalists are deeply interested, may change this situation—but that is for the future. The pictures shown here record existing conditions.

Sorata, a town of about 2,000 inhabitants, is the capital of the province of Larecaja, in the department of La Paz, in the west of Bolivia. It is situated at the foot of one of the highest peaks of

TAPPING FOREST RUBBER IN BOLIVIA.

Mr. F. J. DUNLEAVY contributes to the *Tropical Agriculturist* a report of some observations made by him on the yield of *Hevea* rubber trees on the property of the Boston and Bolivia Rubber Co. He started out with an expert tapper at 5 A. M., and their work was done at 10 A. M. Meanwhile the man had tapped with a *machidine* 345 trees, attaching to them 946 *tichuelas* (cups).



AT THE COMPANY'S STOREHOUSE.

[Cutting the cured rubber from the wooden paddles.]



THE TAPPING TOOL USED IN BOLIVIA.

[The first view shows the full size of the "machadine." The second shows an outline, with the eye for a handle 2 feet long.]

He had placed 1 each on 36 trees; 2 on 103 trees; 3 on 128 trees; 4 on 70 trees; and 5 on 8 trees. Mr. Dunleavy measured the trees as the tapping progressed, showing them to average 16 inches in diameter. At 10 o'clock the tapper returned to the starting point, and went over the route again with a *balde* (empty pail) to collect the latex, which weighed, when brought into camp, 19 pounds. The latex was rapidly cured on a wooden paddle in the smoke of chiri palm wood, forming one *bolacha* of rubber which weighed, immediately after the curing was completed, just 19 pounds—the same as the latex. Sixteen hours

later the *bolacha* had lost $5\frac{1}{2}$ pounds in weight, and twenty days later $3\frac{1}{2}$ pounds more, leaving 10 pounds of dry rubber. Mr. Dunleavy remarks: "This would illustrate to my mind that rapid coagulation is a mistake, and that each coating of latex added to the coagulated *bolacha* of rubber should be properly browned with the smoke, instead of making it only sufficiently solid to prevent dripping from the paddle. This extra smoking would



F. J. DUNLEAVY.

[Manager Boston and Bolivia Rubber Co., Sorata, Bolivia.]

improve the keeping qualities of the rubber and increase the price of the same."

A STORY OF BOLIVIAN TRAVEL.

MR. QUINCY TUCKER, sometime of the rubber trade in New York and Boston, is the author of a series of articles now running in the *Boot and Shoe Recorder* on "Seeking Rubber in Bolivia, and Other Elastic Experiences." Mr. Tucker visited the Bolivian rubber fields with a party who based their hopes for success there upon indications supplied by a gentleman calling himself Baron Henri Arnous de Rivière. The fact that these hopes were not realized does not make Mr. Tucker's narratives any the less interesting. This, by the way, was not Baron de

Rivière's first personally conducted expedition from North America to Bolivia. It is now 15 years since the Beni Gum Co. was formed in New York through his activity, and in an attempt to develop which the late Joseph P. Earle, then an important factor in the crude rubber trade, made a journey to the Beni region, to which he was not wont thereafter to refer with much satisfaction.

RUBBER GATHERING IN PERU.

THE rubber industry in the regions of Peru drained by the upper Amazon is treated in some detail in an official report by the United States consul at Iquitos, Mr. Charles C. Eberhardt, who states that he has recently visited one of the rubber regions and assisted a body of rubber gatherers in their work. He mentions the tapping of trees from about 6 inches in diameter to 24 inches, carrying respectively from 3 to 9 tin cups. An *estrada* of about 150 trees was tapped early one day and visited later by a man carrying a can of about $2\frac{1}{2}$ gallons' capacity, into which the cups were emptied, some of them containing less than a tablespoonful of latex. The result of the day's work was about 2 gallons of latex, which, when smoked over a round stick, formed a hard white substance (which later turned black) of about $4\frac{1}{2}$ pounds of the best grade of rubber—"jebe fino." The consul mentions that a new series of wounds is commenced every month at a point as high as the workman can conveniently reach, each subsequent wound being made a little below and in the same vein, till the bottom of the tree is reached at the end of the month. When a tree has been overworked and the milk does not flow freely, a scaffolding is constructed about the tree, which the worker mounts and inflicts the wounds farther up along the trunk. This practice, however, is very injurious to the tree, if not absolutely fatal in the end, and is forbidden on the tracts which the consul visited. Mr. Eberhardt insists that, despite all reports to the contrary, the number of productive rubber trees in the regions which he has visited is steadily growing less.

THE annual inspection of plantation "Capoacan," of the Ohio Rubber Culture Co. (Canton, Ohio), was made this year by Mr. Charles S. Eddy, connected with The B. F. Goodrich Co. The inspection seems to have been careful and painstaking, and goes into detail in regard to the extent of the planting of rubber to date and the condition of the trees planted in each year, beginning with 1905. On the whole, the report is likely to prove satisfactory and encouraging to the investors in the property.



VIEW OF SORATA, BOLIVIA.

[Headquarters of the Boston and Bolivia Rubber Co.]



VIEW OF MOLLEND, ON THE PACIFIC.

[A Peruvian port through which the Rubber sent from Sorata, Bolivia, finds its way to market.]

Handling of Mechanical Goods Claims—I.

By Alexander Macpherson.

EVERY manufacturer would like entirely to cut out claims made by customers on account of unsatisfactory service, and many can be cut out if the goods are properly made and then properly sold. If intending to put a new line on the market, look into the uses and the service expected. Get out and see an engine and separator at work on the prairie if you want to tackle thresher belts. Don't give a day to it; take a week or more. After a week of interesting research you may decide to cut out all claims by cutting out the belts. But if you can stand seeing the poor old belts misused at the hands of inexperienced men and think that you can make something that will give them a hard time to destroy, perhaps you will have learned that the belts run at a high speed over one large and one small pulley; that the engine is often out of line on a windy day, and that sometimes the poor old duck and rubber thing is expected to act as a logging chain whereby the traction engine is to pull the separator into place. You may come back prepared to make the best thresher belt on earth, but I think that you will also conclude that you will have some claims to look into, in any event, and some to adjust at a loss if you do not sell your goods properly. And so it is with all other conditions you intend manufacturing for. If you are to make good injector hose for use between locomotive and tender, there is no use putting in a water hose lining when you know that the engineer runs his excess steam through the hose, to economize fuel by bringing his water supply up to a high temperature. See how the hose is attached. See what is expected of it and plan to give an article that, when properly used, will give fair service.

Sell goods properly. Have your trouble when selling and reduce your claims. Be careful when making your contract. Get the bargain into plain English, expressing clearly what you undertake to do. I have no use for the expression "We guarantee satisfaction." No manufacturer can undertake to suit all his customers all the time. What he can do by studying the conditions and knowing how to manufacture for them is to give fair value for the money. But what if a man orders an 8 inch 8 ply belt when he should have had a 14 inch 6 ply? Can you suit him? Perhaps the belt may do, but ten to one it will not, and then "You guarantee satisfaction" says the user. Cut out the word "guarantee," or, if a guarantee is necessary, have it specific—a certain friction test, a certain bursting pressure, or a specified tensile strength. You are not an expert engineer, but a rubber manufacturer making goods to certain standards which your customer or his engineer specifies. Help your customer all you can and point out in a judicious way that if you were buying the goods you might change the specification and expect better results, and then let him use his own judgment. If it looks dangerous to you, go on record by letter. Then, if he has trouble, your skirts are clear. Don't drive him away. Give thought to your letter and if the claim comes you can say "I told you so," and prove it, too.

There may be 2 inch 8 ply steam hose that will stand 125 pounds steam pressure indefinitely. If so, I do not know it. In the natural course of events the temperature generated by 125 pounds steam will, in a properly made hose, first char the cotton duck, perhaps the charred duck will give way, and the still soft rubber follow it, but if the hose holds, the heat will eventually char the rubber tube and the steam will find its way through. If your customer orders 1,000 feet 2 inch 8 ply steam hose marine wound to stand 125 pounds steam pressure, tell him how matters stand and let him confirm his order with a clear understanding of conditions. He may want the goods in a rush. It is well to ship promptly, but you are in it not only to please but to make money, and it is not a money making plan to please

by making prompt shipments when you run the risk of having to pay for being obliging at the expense of returned used goods.

Drop the word "guarantee" and reduce the claims. Sell goods on their merits. Undertake that they will be reasonably free from defects in construction. State, if you like, that they will be of a quality at least equal to the material usually entering into goods sold under a certain brand, but do not undertake that they will be perfect in material.

I leave these thoughts about studying the uses of the goods and the proper selling of the goods, and pass on to the handling of the claims made by customers, be these claims real, supposed, or trumped up. Each claim has peculiar features, all worth study. Some look tough at first, some remain tough and difficult to adjust fairly without losing money or a good customer. But when I know I am right and have to plan to convince my man that he is wrong, I look with considerable zest to seeing some of the big ones come in for next season's purchases, details specified and shipping dates given.

Do not imagine that because I am dealing with claims for returned used goods that I have been making or distributing inferior goods. There may be somewhere in the realms of possibility a manufacturer who has never experienced a claim. If so, I would like to look him over. All have claims made upon them sooner or later, let them be just or unjust. The man that has the fewest justifiable claims is the one best off. But how are we to adjust all these with justice to both parties and keep the peace? All I can do is to use the share of brains, judgment and tact with which I have been endowed, or have acquired, and reduce my operations to a system.

Now the farther on a claim gets, the harder it is to adjust. The traveling man that can pass up a supposed claim in a happy way is your right hand man. He nips it in the bud with a delicate but firm pressure that even his sales manager may appreciate, because he does not know what the traveler has done for him. But some time this jewel of a traveler does not get a chance at it. Some day a letter comes from a customer stating that a piece of hose, belting or something else has gone wrong. And here I want to say that I am of the opinion that the sales manager, the one who is responsible for the distribution of the factory output, should be the man to pass finally on all claims. Well, the claim is made. I have been in the habit of classifying all claims under one of three headings:

1. Just claims.
2. Claims made in good faith by the customer but which you are sure are not just.
3. Unjust claims—those that you are convinced are made by the customer when he knows that the goods have not had fair treatment.

Now how shall we dispose of these? In the abstract—

1. If you are wrong, make it right and make it right quickly.
2. If you are right, it is up to you to convince your man that his claim should be withdrawn.
3. Take a firm stand and if the claim is not withdrawn, close the account and notify the traveler not to call on the firm.

In elaboration of these headings, I will first explain the system, and later the methods of handling the system. Don't burden yourself with the details. Get an assistant accustomed to your style of letter and system and turn the details over to him. Keep him up to the mark, but reserve your time for the fine work.

The bookkeeping staff may have accounts which will show the final disposition of the claims made, and I think it is well to have accounts under the headings of "Defective Goods" (chargeable to factory) and "Policy" (chargeable to selling department). But accounts or no accounts, keep a book which will give you the

history of the settlement of each claim. Rule a Claims Record, with headings for (1) Claim No., (2) date, (3) name, (4) address, (5) goods, (6) value, (7) adjustment—whether "not allowed," "defective goods account," or "policy account"—and (8) general remarks. In practice I have found it advisable to have two files, one called "Active Claims File" and the other "Inactive Claims File," to hold all papers pertaining to claim until individual claims are settled. All claims made are active until you have completed your share of the work. Then they either disappear from the Active Claims File or become inactive. If finally settled, remove all papers for distribution. If you have done your work and a lull ensues without the claim being withdrawn, and if there is no account open in the ledger due to the claim, then put it on the Inactive File. Your man may be convinced, but may not admit it and you may never have another kick from him. Inactive things do not kick. When you are sure that they are dead, bury their parts in the general files.

To return to the letter that embodies the claim. On the face of it you may detect that the claim is groundless. Your man may state that the 1 inch 4 ply steam hose sold him did not stand over six months subjected to 125 pounds steam pressure. Or he may complain that the belt sent him has frayed on one edge. Either of these should be easy to handle, especially if your catalogue is in good form. But enter it up in your book with value of goods, if obtainable. It is a claim. If you do not stifle it quickly it might mean a loss to you. It is not allowed, so much saved.

But if it looks reasonable and is not out of the ordinary put it into your assistants' basket. He knows it is to be acknowledged by a form of letter that promises attention, nothing more, when the goods come in charges prepaid. He knows that the traveler or branch interested is to receive copies of all correspondence. He knows that the receiving clerk is to be notified that you want to have the original order on the Claims file, that the bookkeeping department and, in some cases, the order department, should know of it. He writes a letter to one, sends a copy to another, gets an initial here or telephones there. He finds whether a traveler is near your man and consults with you as to the advisability of wiring to him to report on conditions if he cannot adjust without an allowance. On to the Active Claims File goes everything and then he tackles something else.

You note *re* the traveler: "Adjust without an allowance." My rule is if an allowance is to be made the goods in full of the allowance must come in. Do not permit a branch manager or traveler to make allowances on claims. These are rules and like all rules are subject to being deviated from. Perhaps some trifling allowance will adjust a claim amicably. "Bang!" goes rule No. 1 and it pays in time and money to let it go bang. You may find that a branch manager or traveler has been settling two or three claims in a nice way without allowances. "Bang!" goes rule No. 2. "Use your own judgment next time, Mr. Branch Manager, or Mr. Traveler. You have been doing fine work. You should best know how to settle these unjust claims, because you know your man." But does it pay? You get a claim, you pass it on to your newly found star: "Settle it up." Back comes the fatal letter: "I allowed him for one-half of the full roll. He is returning 50 feet to show how the rest gave out."

I sent a traveler once to adjust a claim with a customer who had written in. He went, he saw, and he fell down. He thought he had done well, and so it should have been, but he had not all his facts. He should have had them, for he had memoranda of all orders from his man and all the correspondence. He saw hose gone wrong, 4½ inch hose. He reported in favor of giving two new lengths in full of claim for six; perhaps he promised this adjustment. At all events, his man stated as much by letter. And what were the facts? The hose was ours, made to special order, confirmed and reconfirmed as it looked irregular, bought by a railway, but the complainant was a neighboring contractor. The contractor never bought a foot of such material from us. If he

bought it from the railway, he used it for purposes for which it was never intended. But could I convince him after our man had, in his estimation, passed his claim? No. "Give me my two lengths." "But if you did not receive what you ordered, why did you not return it? The difference is quite perceptible." "Give me the two lengths Jones promised." And he got them. He was honest, good pay, and bought freely. He was honestly off in this claim, but could not be convinced. Jones lost me those two lengths and it hurt. But drop it; it is over. It does not pay to punch holes through rule No. 2.

Then the goods come in. The receiving clerk receives the goods, reports length, width, diameter, or any other sizes with weight, brand, etc., using a set form with returnable, perforated instructions ticket attached. This form is in triplicate, one to be passed on to the factory superintendent with the goods, a second to be sent to the sales manager, and the third to be retained by him for his records. He is through until he receives his instructions ticket, when he removes his claims ticket from his current files.

It is then up to the superintendent. Join the superintendent yourself when he looks over a claim. Give him your points and get his points. Bear in mind that you are to be the judge between customer and factory. You have the customer's side of the case, now get that of the factory. The superintendent may report: "Hose does not leak; cover loose in places; not defective." See the length. Accept his leakage test. You find the cover is detached from the fabric. It indicates that it never was properly attached. Defective, of course. Charge to defective goods account. Simple enough; this is a minor case. Your assistant has seen similar letters dictated by you and this is how he goes about it. He writes the customer telling him that under test the hose does not leak.

However, we note that the service has brought to light a minor defect in construction, not perceivable even under your rigid inspection, and which might not have developed once in ten times. Of course, you are in the wrong and you are quite willing to endeavor to adjust. Your idea is that as the hose had evidently been in use some time his customer would not care to have such service without paying for it, so you would be glad to send a new length, charging at the rate of say 25 per cent. of the original charge. Your factory is wrong; you cannot expect to get much for the service rendered, but something is due for it if you have sold your goods properly. The thing is to get your dealer with you. Appeal to his reason. You may say "If you are wrong, give in," and I agree with you, but no reasonable man expects something for nothing. He expects to get what he pays for, but not 25 per cent., or even 5 per cent., over the bargain. And if he gets a brand new length of hose "no charge" for the length that has been in use for some months, then I maintain he is getting more than he bargained for. The carwheel makers get paid for the time a wheel that has given out has been in use, less the value of the metal as scrap. Why should not you receive payment for the service your goods have rendered? But if he will not fall in line, do so yourself. You made the mistake, not he.

[TO BE CONTINUED.]

THE INDIA RUBBER WORLD has been favored by the Colonial Rubber Co., Limited, of Sydney, New South Wales, with an official copy of the new Australian tariff schedule. The rates on rubber goods under this schedule were given in this journal in January (page 119), but some additional information supplied by the Colonial company may be of interest to exporters to Australia. They say: "The method of estimating the value for duty is to take the f. o. b. value at the port of shipment, and add 10 per cent. to this amount. The duty is then calculated on this total—so that a line of goods that is listed to carry 20 per cent. actually pays 22 per cent. Outside packages of all description are free of duty, irrespective of the nature of the contents."

Some New Rubber Factory Appliances.

SCHOFIELD PATENT BIAS SHEAR.

THE Schofield Bias Shear (patented February 19, 1907), illustrated on this page, is designed to cut all fabrics on the bias, from the softest and finest to the heaviest cotton duck used in vehicle tires or hose. The operation is entirely automatic, the stock being stripped from the roll, fed to the machine, cut and dropped on a table, or carried by conveyor far enough to be picked up and put into books. One belt drives the entire machine.

The cutters or knives are 75 inches long, and they will cut up to 52 inch wide fabric on a 45° angle. This angle is not adjustable. The width of the strip between, and at right angles to, the cut, can be regulated at will, from say 6 up to 36 inches. A five-step cone pulley drive is provided, giving as a minimum 10 to 12 strokes on the long cuts, increasing in number as the cuts are shorter. Within reasonable limits the cutting speed may be increased to any point at which the cut strips can be economically handled. An unusual feature of the machine is its swinging upper knife, which adjusts itself to the cut. The lower blade is firmly fixed to the bed and the upper one is swung from an horizontal shaft by two freely moving bearings. The blades are set at an angle, not only vertically, as is usual in shearing machines, but also horizontally in such a way that the cutting edges make an angle in the horizontal plane; or, looking down from above it will be seen that the cutting edge of the knives cross each other. This setting of the knives and the pivoting of the top one confines the cutting to one point so that the action is precisely like that of a pair of hand shears, the cutting is clean and free from pulling, and so accurate as to width as to make unnecessary the usual allowance for trimming when hand cut. The tendency of the knives to self-sharpen keeps the cutting edges in good condition for a long period. Duplicate knives are inexpensive and can be put in place easily.

The feeding is accomplished by a sliding bar having on it a set

of gripping fingers which reach in and under the top knife, taking hold of the newly cut edge and drawing the material forward until released by a cam. This sliding bar can be changed to five different strokes on length of travel, and the release cam can be adjusted to any desired point between each stroke, thus regulating the width of the cut fabric to any point between 6 and 36 inches.

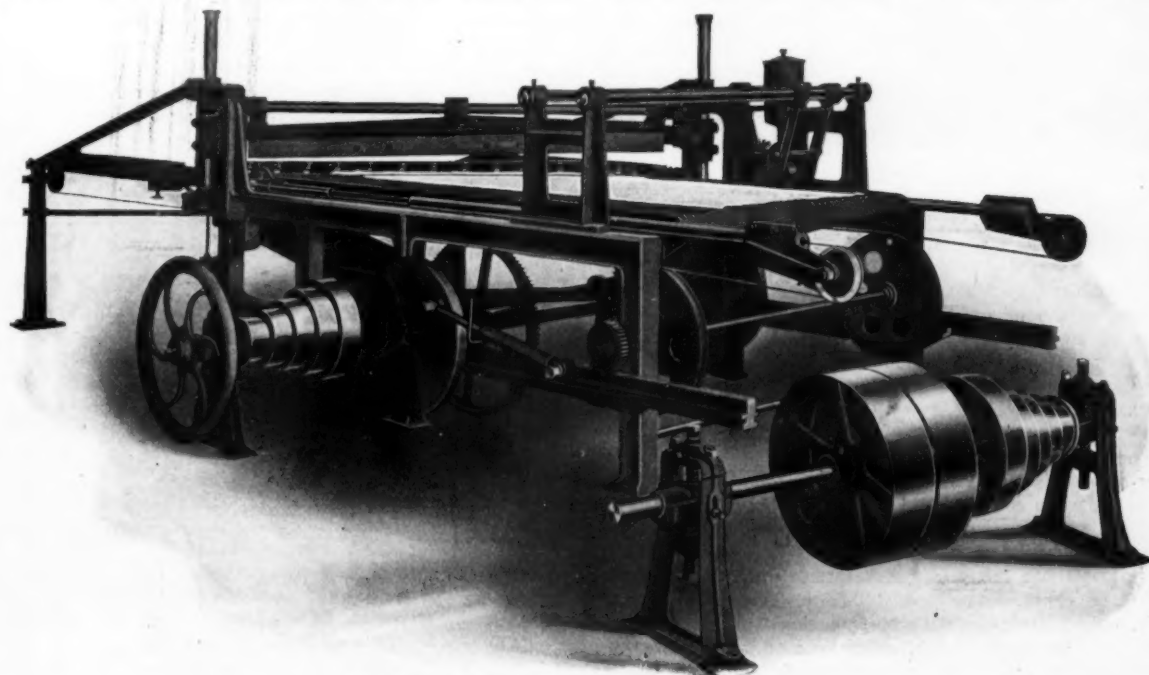
The outside floor space occupied by this machine is 9 x 18 feet, without allowance for frame work to carry stripping rolls, which take up about 12 feet additional in length.

For coated fabric some sort of a stripping device is necessary, which would be driven from the countershaft included with the machine, and this can be supplied in the form of a friction let-off with a pair of stripping rolls controlled by a friction clutch requiring more or less continued attention, or in place of the friction clutch can be supplied a variable speed device regulating more automatically the delivery of the goods to the cutters. The grippers cannot be depended upon to strip from the roll, otherwise the strength of the grip and the required pull would mutilate the edges of the cloth. On some kinds of fabric, of course, no stripping device is necessary.

The particular machine illustrated here is fitted, when desired, with a movable cementing device consisting of holder fitted with a valve regulating the flow of cement, and roller which is adjustable vertically to get any pressure desired, all sliding on two bars the full width of the machine. It is stated that one man of ordinary intelligence can operate the machine, the disposition of the cut material governing the number necessary to handle that. The makers of this machine, the Birmingham Iron Foundry (Derby, Connecticut), are prepared to supply a larger machine to cut fabric up to 60 inches wide and cutting stroke up to 60 inches.

SOMETHING NEW IN BIAS FABRICS.

F. VOLAND, a well known inventor, resident in Lyons, France, is the inventor and patentee of a machine for taking any kind of

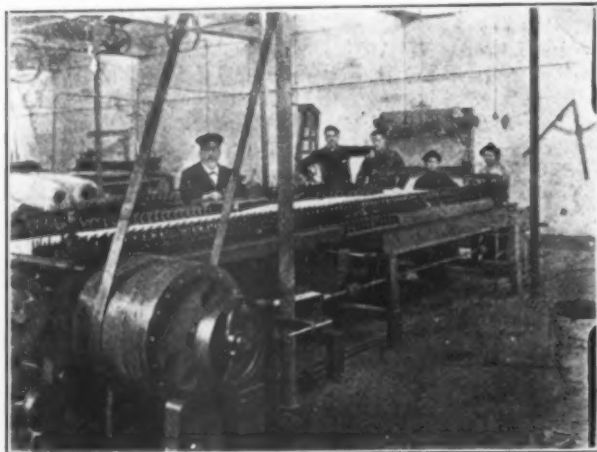


REAR VIEW OF THE SCHOFIELD PATENT BIAS SHEAR.

fabric in the roll and so stretching it that it is turned from straight weave to bias weave; then by coating it with a secret preparation, said to be 20 per cent. rubber and 80 per cent. finely divided cotton, and further by doubling the fabric over on itself, in fact making a double texture of it, he produces a wonderfully tough, cheap, bias fabric from which all the stretch has been taken. It will be seen at once that the flimsiest, cheapest cloths thus stretched and built together must form a fabric practically untearable, stronger than a fabric of equal weight made of the best long fabric, and yet infinitely cheaper. It will be further seen that this process is applicable to cotton, silks, in fact to any of the fibers used in cloth making to-day.

The matter is of present interest to the American rubber trade because of the incorporation of the Bias Waterproof Fabric Co., who have offices in New York and who expect soon to have a factory in Passaic, New Jersey, operated by the inventor himself.

Bias fabrics are not unknown to rubber mill practice to-day. In both the shoe and mechanical goods trades fabrics are cut in bias strips and used where a maximum of strength and a minimum of stretch are sought. The two points of apparent novelty in the invention are the doubling of two bias fabrics together for greater strength and the secret rubber and cotton solution which is said to be a most important part of the new fabric. To be wholly exact the doubling of two bias fabrics with rubber be-



NEW MACHINE FOR BIAS FABRICS.

[Inventor Voland at the left.]

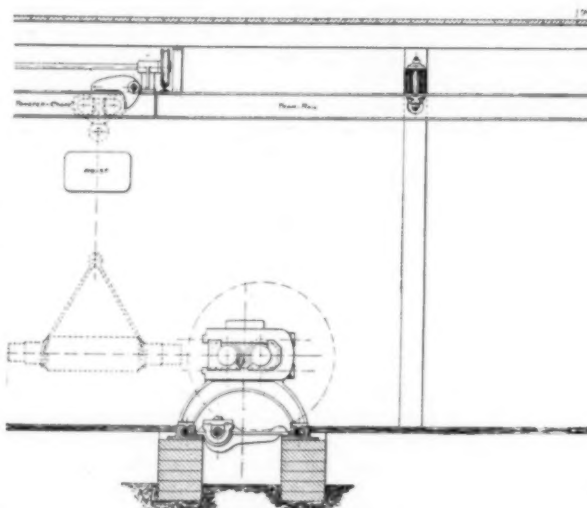
tween is, after all, not new. Back somewhere in the seventies Henry G. Tyer, of Andover, Massachusetts, manufactured a goring for the Congress arctics, where the fabric was stretched biaswise by winding it slowly over a wooden shell and winding in on one side curved pasteboard lifts, thus stretching one margin of the sheet of fabric and allowing the other to shrink. This was doubled against another sheet of fabric with rubber between, stretched in the same way, the object being to allow of the production of a strip of double texture cloth that, pulled in one direction, would be quite elastic, the product being just the reverse of what is sought by M. Voland.

The American company just formed, which has been incorporated for \$300,000, plans to form subsidiary companies to take over the production of fabrics for various lines of manufacture. For example, one company will be formed for the manufacture of balloon cloths, cotton and silk fabrics for the mackintosh trade, and whatever else the rubber clothing trade call for. Another will take up fabrics for belting, hose, and automobile tires, while still others will cover the general clothing trade and go into the manufacture of light untearable sails, non-leaking umbrellas covers, tents, and so on.

Through the courtesy of the treasurer of the company, Mr. M. P. de Bor, THE INDIA RUBBER WORLD is able to present a picture of the machine used in making this bias cloth, and incidentally a likeness of its inventor.

JOHNSTON'S RUBBER MILL CRANE.

AUGUST JOHNSTON, No. 11 Broadway, New York, long known as a practical designer of rubber machinery, has brought out



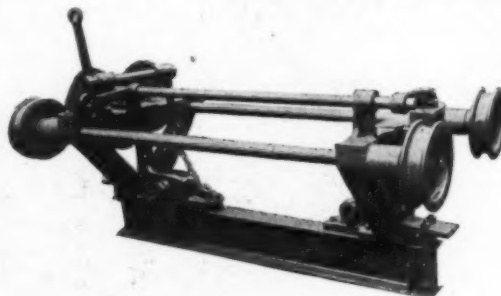
JOHNSTON'S RUBBER MILL CRANE.

[Outline view of crane handling a roll from grinding mill.]

a small crane for use in rubber factories, something that all manufacturers will appreciate.

Any kind of hoist may be used, hand power, electric or pneumatic, and which can be operated from the floor, by means of pendant hand chain. This arrangement makes a simple and reliable method of transferring heavy and light loads of any description at the least cost of install, and at the same time gives an easily worked system of transferring.

In order to get the most efficient arrangement to suit any particular requirement, the outlay in general must be done to suit the building, but as this arrangement can be made to transfer the trolleys and hoists in any desired direction, it is of the



JOHNSTON'S RUBBER MILL CRANE.

[Illustration of overhead running roll.]

utmost importance to so arrange that the longest runs will be for the transfer-crane itself, and that the individual or single tramrails can be put in to reach almost any corner where it would be impossible for the main transfer-crane to cover.

In this way a transfer system can be built that will cover not only one or more buildings individually, but that can be altogether connected with each other—for instance:

Factory to connect with storehouses, loading platforms, yards and sheds. It is best suitable for loads not exceeding 2 tons, as it can be operated by hand-power. For long travels or runs, electric motors can be employed, both on the hoist and transfer-crane.

United States patent No. 744,464 has been granted to Mr. Johnston, under date of November 17, 1903.

CONTINUOUS VULCANIZATION PROCESSES.

CONTINUOUS vulcanization has been the dream of the rubber manufacturers for many years. Of course only certain lines of manufacture were thought of in connection with it, such as are produced by machinery in greater or less lengths, that is, tubing, hose, insulated wire, and sheet rubber for various purposes. For example, when the gossamer rubber business was at its height, Henry Burr evolved an appliance for electrically curing the coated fabric as it came off the spreader, his plan being to obviate the necessity of solarization. For some reason the process never went beyond its experimental stages.

Then, too, it must not be forgotten that in the days of the vapor cure, fabrics in the piece, rubber coated, were continuously vulcanized by running the piece rapidly through a heated chamber containing chloride of sulphur vapors. This up to the present time is about the whole of the record of continuous vulcanization.

In the line of mechanical rubber goods, the manufacture of hose in greater than 50-foot lengths and its vulcanization at the same time has often been mooted. The first part of this problem was successfully solved by Henry Cobb at his plant in Wilmington, Delaware, where he produced a garden hose with a lining and covering of rubber, with plies of knitted fabric between. This was run through a lead press, coated with a continuous tubular lead envelope which acted as a mold, the whole being coiled upon drums and thus vulcanized. After the cure, the lead was stripped off and remelted. His son, departing from this procedure, invented a type of mold in which the hose could be coiled and cured, and he also was able to produce garden hose in 500-foot lengths. In both of these instances, however, the vulcanization was a wholly separate process, and required an extra handling of the hose after manufacture.

Quite recently, however, a young inventor, connected with one of the great rubber companies, after much experimentation, has produced a machine which standing close to the looms that weave

the fabric insertions receives the hose uncured and winds it on a drum a few feet distant, thoroughly vulcanized.*

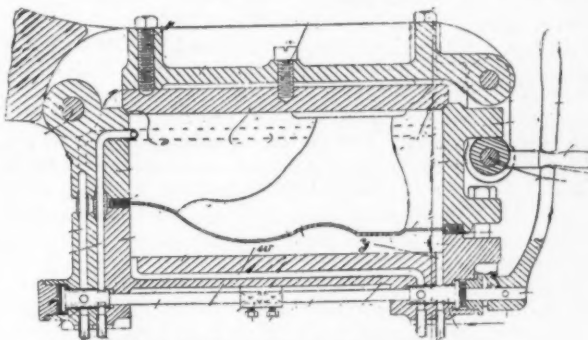
Perhaps the most strikingly ingenious part of this machine is the arrangement of supporting the hose as it passes through the vulcanizing chambers. This is done by a number of tightly stretched wires fed from one side, and over drums at the other, but so guided and held that when inside of the vulcanizing chamber they lie in corrugations in the hose forming a continuous traveling mold. The hose is thus cured straight instead of in a curve and is wrapped, if that term may be used, and unwrapped automatically.

The accompanying illustrations show in detail the parts of this machine, one of the few new and perhaps revolutionary inventions in rubber of the last decade. So far the machine has been used wholly for the manufacture of garden hose. It is quite possible, however, that it may be used for other kinds of hose, and, if it can be adapted for insulated wire and cables, it would certainly greatly simplify that portion of the rubber industry as well. The machine has been patented in all rubber manufacturing countries.

NEW PROCESS OF VULCANIZING SHOES.

At the present time any invention relating to the manufacture of rubber goods that bears the slightest impress of novelty or practicability is of interest. Mr. Mason's patent claims, therefore, are bound to be closely analyzed. Harking back to the Marvel patents, at the beginning, it will be well to remember that they covered a sectional mold adapted for a certain type of press which formed and vulcanized a rubber shoe without a stockinette lining. The Doughty patents owned by the Atlantic Rubber Shoe Co. covered a type of mold and vulcanizing press that produced a shoe with a stockinette and other fabric lining.

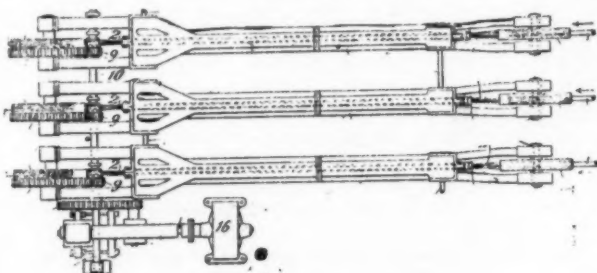
The Mason patents that are here illustrated cover a mold one plate of which is in contact with the sole of the shoe, forms it into shape and, being heated, vulcanizes it, while the rest of the mold is an inclosed chamber in which the remainder of the shoe is enclosed and into which heated air is forced, the vulcaniza-



MASON'S SHOE VULCANIZING OUTFIT.

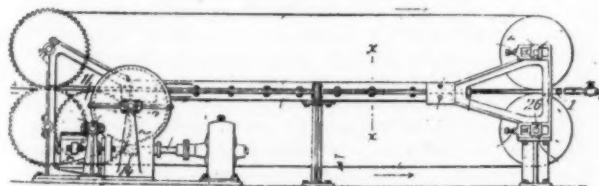
tion of the upper being accomplished by "dry heat," while the sole is cured by what is known as "press heat."

The difficulty that at once suggests itself to the rubber manufacturer is that of working these two heats together, the normal press heat being about 30 minutes in duration, while the normal dry heat lasts from 3 to 7 hours. Of course, by compressing the air, the duration of the dry heat could be shortened, but that involves the use of Governor Bourn's patent. It would be possible, indeed, to cure the sole in 30 minutes; then cool the lower platen until the upper was cured; or the air might be exhausted from the mold chamber and the heat affected by direct radiation from the metal sides in much less time than the normal dry heat. However the plan works out, it is certainly ingenious and should produce a shoe with a sole clearer cut and denser than under the old process. As for the upper, it will probably appear to the casual observer unchanged.



NEW VULCANIZING APPARATUS.

[Plan View of Set of 3 Vulcanizers Showing Endless Conveyors and Means for Causing their Continuous Travel Therethrough.]



NEW VULCANIZING APPARATUS.

[Elevation of the Apparatus Shown in the Preceding Illustration.]

New York City Buys Fire Hose.

SIX PLY HOSE FOR HIGH PRESSURE SERVICE.

THE fire department of the city of New York, by way of preparation for the high pressure system soon to be introduced on an important scale, has purchased a quantity of hose of a class not hitherto used by this department—6 ply rubber hose of 3 inches internal diameter.

The specifications require lengths of 50 feet, with New York fire department standard couplings attached, each length to weigh, with couplings, not more than 100 pounds. Hose to be made 6 ply, with 7 ply capped ends, of duck woven from best long staple Sea Island cotton, and the best Pará rubber; to be sufficiently pliable to permit easy handling; duck to weigh not less than 22 ounces to the yard when made 40 inches wide; rubber lining to be hand made, not less than 1/12 of an inch thick, not less than 3 calendar, and so firmly united to the cotton fabric that it cannot be separated without breaking or splitting in two; cover of the hose to be made of the same quality rubber; rubber and duck to be antiseptically treated. The brand name of the manufacturer is to be placed on each length.

Hose must be capable of standing a test pressure of 400 pounds to the square inch, and to go out straight, without writhing or twisting more than one revolution or elongating more than 30 inches per length, or increasing in exterior diameter more than 1/4 inch at any point. The hose must not contract in length under pressure. In addition to the general test, pieces selected at random will be subjected to this special test:

"(a) From said length a piece one inch long shall be cut from any part of the hose; this one inch piece shall then be placed on a mandrel, which latter shall be suspended from centres so as to turn freely and a weight of 20 pounds shall be applied at right angles to the point of separation of the remaining layers of duck, and the layers must not unwind more than 3 1/2 inches in 10 minutes.

"(b) A piece of tube or rubber lining, which is 1/12 inch thick, shall be taken from any part of the same length of hose and shall have placed upon it marks 2 inches apart; the rubber shall then be stretched until the marks are 12 inches apart and immediately released, then re-marked so that the new marks shall be exactly 2 inches apart; the rubber shall then be stretched until the new marks are 12 inches apart, and remain stretched in that position for 10 minutes without breaking, and upon being released and allowed to stand for 10 minutes, the last marks shall not be more than 2 1/4 inches apart, showing a permanent set of not more than 1/4 of an inch."

A piece of the duck without rubber friction when tested in the piece, with jaws one inch wide, must show a tensile strength of not less than 300 pounds for the warp threads and not less than 375 pounds for filling threads; all yarn used to be not less than 1 1/2 inch staple.

The hose to be guaranteed by the manufacturer to stand, for the full length of four years from the time it is put in use, a pressure test of 400 pounds to the square inch, together with the ordinary wear and tear and use of the hose, but the guarantee shall not be held to apply where damage may be determined by the department to have been caused by being run over by vehicles or stepped upon by horses, or caused by fire or acids.

THE LATEST PURCHASES OF HOSE.

Bids for supplying hose for the New York fire department were opened on March 3, as announced previously in THE INDIA RUBBER WORLD [March 1, 1908—page 203], as a result of which contracts were awarded as follows:

For the Borough of Manhattan:
30,000 feet 2 1/2 inch 4 ply rubber fire hose; awarded to the Republic Rubber Co., at \$1.04 per foot.
30,000 feet 3 inch 6 ply rubber hose for high pressure system; awarded to The Diamond Rubber Co., at \$1.73 1/2 per foot.

For the Borough of Brooklyn:

10,000 feet 2 1/2 inch 4 ply rubber hose, awarded to The Diamond Rubber Co., at \$1.13 1/2 per foot.
10,000 feet 3 inch 6 ply rubber hose for high pressure system; awarded to the Republic Rubber Co., at \$1.64 per foot.

One lot of 20,000 feet of 3 inch 5 ply rubber hose for regular service only brought out two bids, at a price higher than the commissioner desired to pay, and he decided there had not been enough competition, and ordered new bids. No bids were invited on the date mentioned for cotton hose.

MILLIONS OF FEET OF FIRE HOSE.

A LOT of figures regarding city fire department equipment appear in a volume of special reports of the United States census of 1905—"Statistics of Cities Having a Population of Over 30,000." The number of cities under review is 154. The total length of fire hose of all kinds reported by these cities is 4,216,438 feet, summarized as follows:

	Feet.
Group I.—15 cities, Population 300,000 or over.....	1,851,644
Group II.—25 cities, Population 100,000 to 300,000.....	779,638
Group III.—47 cities, Population 50,000 to 100,000.....	855,052
Group IV.—67 cities, Population 30,000 to 50,000.....	730,104

The estimated population of these cities in 1905 showed a gain of about 50 per cent. over the decennial census returns of 1900. There has not been a proportionate increase in the amount of fire hose reported, however. At least, a similar report on 140 cities in 1898 showed a total of 3,361,160 feet, adding 50 per cent. to which would give a total of over 5,000,000 feet. Since 1898 the number of cities having over 30,000 inhabitants has increased to 154, and the total amount of hose reported is only a little over 4,000,000 feet.

There is no established relation between the amount of hose reported and the estimated population of the cities. To take 10 cities at random, we arrive at this average of length (in feet) of hose per 1,000 of population:

Cities.	Population.	Feet Hose.	Average per 1,000.
New York	4,000,403	494,536	124
Philadelphia	1,417,062	100,000	70
Baltimore	546,217	113,015	207
Pittsburgh	364,161	98,050	270
New Orleans	309,639	40,960	132
Minneapolis	261,974	54,974	206
St. Paul	197,023	48,250	240
Cleveland	437,114	52,650	120
Haverhill, Mass.....	37,830	20,625	557
Holyoke, Mass.....	49,934	24,550	491

The smallest city in the list of 154 is La Crosse, Wisconsin—population 29,078, with 15,050 feet of hose, or 519 feet per 1,000 inhabitants. Taunton, Massachusetts, with 30,967 inhabitants, reports the same number of feet of hose. Seventy cities report a smaller total amount of hose. The smallest amount of hose reported by any city is 3,000 feet, for Harrisburg, Pennsylvania, with 54,807 population, or 55 feet per 1,000 inhabitants.

There is no guarantee of the accuracy of the hose statistics. The amount credited to New York is 494,536 feet, as long ago as 1905, whereas the recent report by the New York Board of Fire Underwriters gave only 5,768 lengths in service in the boroughs of Manhattan and the Bronx, giving only 288,400 feet by not considering that some of the length are less than 50 feet. There is considerable hose in service in the other boroughs, but nothing like enough to bring the total up to the census report figures.

THE United States consul at Iquitos reports the beginning of a survey for a British company, to determine the practicability of constructing a railroad 75 miles long to a point on the Ucayali river, accessible by launches, from a rich rubber district, the product of which under present conditions must be transported down the Madeira river to Manãos, thus giving Brazil the benefit of export duties on a strictly Peruvian product.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

AT THE Manchester Motor Show, held February 7-15, there were one or two tire novelties that may claim attention. At Messrs. Charles Macintosh & Co.'s stand were exhibited several Kempshall tires, this firm being the manufacturers for the Kempshall Tyre Co. of Europe, Limited,

TIRES AT A MOTOR SHOW.

whose head offices are at Trafalgar buildings, Northumberland avenue, London. The main feature of this tire is the broad square tread containing elliptical depressions at intervals—at least this is my way of putting it. Some of the cars in the Show were fitted with this tire, which I have heard highly spoken of. In contradiction to what prevails in other quarters the company announce that they do not give any guarantee whatsoever with the tires, though no trouble or expense is spared in their production. The form of the tread is of course to act as a non-skid device and judging from results it gives great satisfaction on this head. An exhibit which attracted a good deal of attention was the Slee tire, a Manchester product which has had extensive trials during the last two years. The novelty in its construction is that it is a solid tire with the resiliency of a pneumatic, bands of flexible steel being placed between the tire and the rim and a considerable air space being allowed in the tire. No inner tube is used, and there is consequently no danger of puncture. Satisfactory results are stated to have been obtained on 10,000 mile runs.

The Palmer Cord tire is now no novelty, but one cannot say this of the complicated looking electrically driven machine which was in operation at the show, making up the tires from the solution threads. This proved a popular attraction, biscuits of Pará rubber having now lost their erstwhile powers of drawing public attention. The North British Rubber Co. were not in evidence this year, but a new comer in the firm, I. Frankenburg & Sons, Limited, invited attention by their show of "Franken," a new filling for motor tires. This substance has the general appearance of brown substitute and a filling costs from £1 15s. to £4 19s. per wheel, according to size. The Elastes Co. also had an exhibit, their product looking much more like brown substitute than it did at first, when it was a yellow color.

Apropos of this topic, I may say that a good deal of experimental work has been done in various quarters during the last year or two to improve these fillers, the general composition of which is well known. An important point about the Frankenburg product seems to be in the short time required in filling, this in the case of other elastic fillings being usually three or four days in order to allow the liquid to get thoroughly solidified. Another material of this class, though not represented at the show, is that brought out by Herr Pflümet, of Dresden, and called "Pflumatic"; it is composed of gelatine and glycerine, but has compressed air blown into it to form a spongy material in which the air is retained in the cavities.

The spring wheel is continually being heard of in some form or other. One of the latest ideas comes from America and I was

OTHER TIRE TOPICS.

solemnly informed the other day that the rubber tire was doomed. I am told, however, by those who had paid a small sum of money for an option to purchase the patent rights that they had sacrificed the deposit in preference to going any further in the matter. The main drawback seems to be the loss of speed, amounting to nearly 50 per cent.

Motor tires generally have been reduced in price in accordance with the fall in rubber, but the causes of the fall have not as a rule been entered into. Messrs. Michelin, however, have let their customers into some trade details and in their circular explain that the fall is due to the closing of 17 American facto-

ries and the consequent accumulation of Pará rubber at Liverpool. I do not find in this announcement any list of these factories, however, and the fact of any such shutdown probably will be in the nature of news to American readers.

ON February 18 this works was put up for sale by auction at Manchester, but the bidding was not at all brisk, and, despite the eulogies of the auctioneer, the first bid of £1,000 only rose to £1,400, at which the property was withdrawn. This

WERNETH RUBBER WORKS.

works, which is by no means of imposing dimensions, was started about ten years ago by Mr. Cresswell, who at that time left the Hyde Imperial Rubber Co. (now the Unity Rubber Works), after making a fortune in the cycle tire boom. Mr. Cresswell had built himself a large residence in the neighborhood of the Hyde Imperial Works, and the Werneth Works, which he subsequently started, are less than a mile away. After a few years Mr. Cresswell gave up the business, and in 1903 the works passed into the possession of Mr. Salmond, whose main idea was to install his son therein. The son, however, having embarked upon other ventures, the owner now wished to dispose of the works as a going concern, which, though small, has shown regular profits.

THE conversion of this prosperous private concern into a limited company only concerns the rubber trade to a small extent. If the business had consisted only

R. J. DICK, LIMITED.

of the well known balata belting and horseshoe pads one might easily have supposed that the new competition arisen since the expiring of the balata belting patent was the primary cause of the conversion, and the large figure of £150,000 for good will might have come in for criticism. The business, however, is very largely in ordinary leather boots and shoes, and is competing successfully with the large concerns at Northampton and Leicester. From what I hear the capital of £650,000 and the sum asked for good will are not considered excessive.

NEXT to the prevailing topic of the decline in prices of raw rubber, the topic which has of late attracted the most attention in the Liverpool trade is the action between the North Western Rubber Co., Limited, against Huttenbach & Co., in which the

TRADE JOTTINGS.

former sought to entirely reject a large consignment of pontianak on the ground of its inferiority. The other side maintained that the North Western company were bound to accept it at a reduction in price fixed by arbitration, according to recognized Liverpool custom. A large number of brokers and rubber manufacturers have given evidence in London on one side or the other, but owing to the indisposition of the judge trying the point as to the Liverpool custom the case has been adjourned and at the time of writing is not concluded.

All sorts and conditions of people seem nowadays to take a close interest in the rubber trade and the use of rubber street pavement is being widely discussed as the only panacea for a forthcoming glut in the raw rubber market. I cannot say that I have much faith in an immediate revolution in this direction, and I am interested to note that our London contemporary does not think that there are enough data yet to go upon to show that rubber pavement is suited to heavy traffic. At the same time the *Journal* recognizes that some new use for rubber is imperative in order to sustain prices and proposes therefore a meeting of those interested in order to discuss the situation. Personally I think this is rather a matter for the future when the plantations produce a much larger proportion of the world's output than is at present the case.

A fire recently occurred at the Dialene recovered rubber works

at Leyland, considerable damage being done. This works is now entirely in the hands of the Baxter family. Mr. J. E. Baxter, I regret to say, has been seriously ill with pneumonia, but has happily pulled through.

EVERY now and then I refer to certain metallic oxides which interest me from both a rubber and mining point of view. In the

ZINC OXIDE.

last twelve months both lead and zinc oxides have fallen considerably in price, but while lead continues on the down grade zinc has had an upward spurt during the last week or two. This is due to an agreement among the principal Silesian (German) producers to restrict the output. Unlike copper, which the world cannot get on without, zinc is never likely to go much above £30 per ton because its use is not really indispensable. America now takes the lead in zinc production, having quite recently got ahead of Germany. As the production of zinc has increased so much of late years a fall in price to the point at which mining is no longer attractive seemed imminent and it is not surprising that something in the nature of an arrangement among producers has come to pass. Although an increasing amount of zinc ore is being mined in England none of the oxide used in rubber works is made in the country. The principal mine in Cumberland belongs to the well known Vieille Montargis Co., of Belgium, and the ore is shipped to Belgium to be smelted and converted into oxide by burning.

THOUGH not on a scale to effect the threatened congestion of raw rubber supplies, a reference may be made to a comparatively

NEW APPLICATION OF RUBBER.

new use of rubber. This is in connection with the pianola, which is gaining increased favor among those who are not piano players. Vulcanized rubber tubing about ½ inch diameter and of lengths from 8 to 24 inches or more is now generally used in the mechanism instead of the metal pipes previously employed.

MR. ARTHUR DU CROS has been elected member of parliament for Hastings, in place of his father, Mr. Harvey Du Cros, who

A TIRE MAN IN PARLIAMENT.

resigned his seat owing to pressure of business. The new member, who had as his liberal opponent a son of the late Sir W. Vernon-Harcourt, made tariff reform a strong feature, and a good deal was said about foreign competition in motor cars and tires. Mr. Du Cros, who is 36 years of age, has been closely concerned for some years with the Dunlop Pneumatic Tyre Co., first as works manager and now as director of the businesses at London, Birmingham, and Coventry. As in the case of Mr. Harvey Du Cros at the general election, motor cars played a very conspicuous part on the polling day.

THE COTTON SITUATION.

CHINA, long an important consumer of cotton goods, appears to be a larger producer of raw cotton than has been generally supposed, though as yet no trustworthy statistics exist. A member of the American consular service at Shanghai estimates the total possible production of Chinese cotton at 590,000,000 pounds. The Chinese are showing a determination to improve the products of their cotton fields, in which they are encouraged by the growing demand for raw cotton by the mills of Japan. If success attends the various plans now being worked out, the consul referred to thinks that "American cotton will only be bought by Japan when her requirements exceed China's production." Cotton manufacturing under modern systems is also making progress in China, in addition to the native methods of working cotton, which give rise to a large consumption.

* * *

The growth of cotton in Mexico is increasing. The local production does not yet equal the consumption. Imports of raw cotton show a falling off, however, and some Mexican cotton is exported. *Daily Consular and Trade Reports* says: "The exports of cotton from the United States to Mexico during the fiscal

years 1905, 1906 and 1907 were valued at \$3,768,126, \$1,620,443 and \$36,413, respectively."

THE EDITOR'S BOOK TABLE.

ROYAUME DE BELGIQUE. MINISTERE DE L'INDUSTRIE ET DU TRAVAIL. Monographies Industrielles, Aperçu Economique, Technologique et Commercial. Group VI. Industries du Caoutchouc et de L'Amiante. Bruxelles: 1907. [Paper. 8vo. Pp. 237 + plates + map.]

THE industrial monographs now being issued by the Belgian ministry of industry and labor form a series unique in one respect. It is not usual for a governmental office to publish works of this class, and when the attempt is made the books produced are not apt to be of a practical character. The volume before us, however, devoted to the caoutchouc and asbestos industries, could hardly have been better written, or more informing, considering its scope and purpose and its limited size. The object of this series seems to be to give briefly accurate information regarding the more important industries of Belgium, and the fact that the volume is devoted to rubber of itself indicates the estimation placed upon this industry by the government of that kingdom. The rubber industry there, by the way, is more extensive than may be generally supposed, there being named 30 factories devoted to production of rubber and asbestos goods, and with only one or two exceptions these employ rubber.

The volume begins with a chapter on the trees and plants producing rubber and the character of their product, with notes on the methods of extracting latex and preparing rubber and statistics of the world's production. The properties of rubber are discussed and the materials employed in connection with it in manufacturing. Details of factory practice are next referred to, and a description of the principal articles of rubber manufacture. Incidentally gutta-percha and balata receive the same attention in this volume as india-rubber. A separate division of the work relates to asbestos and its industrial uses and treatment. A number of informing illustrations relate to preparing crude rubber and operations in rubber factories, with further factory illustrations devoted to asbestos. The most interesting single feature of the work is a map of the world on considerable scale, showing the distribution of native rubber species and also countries where rubber plantations have been formed, different colors being used for the several species.

The author of this work is not named, except that M. Gustave van den Kerckhove is mentioned in connection with the map, and it is understood that this well known Belgian rubber expert collaborated in the preparation of the text of the volume.

KALENDER FÜR DIE GUMMI-INDUSTRIE UND VERWANDTE BETRIEBE. 1908. ... By Edgar Herbst. Mit der Beilage: Jahrbuch der Kautschuk-Industrie. Dresden: Steinkopff & Springer. [1907.] [Leather. 24mo. Pp. 454. Price, 4.50 marks.]

In this little book the German rubber company manager or factory superintendent has in most convenient form for reference a large amount of information which is likely to come into frequent use and which without such a compilation is very often difficult to put one's hands on. It gives the latest information regarding the various associations in the German and Austrian rubber trade, notes on the import duties of the principal countries, tables of comparative rubber prices in the money of different countries, per pound and per kilo; specific gravity of rubber and other materials, statistics of rubber production and of rubber goods imports and exports; a summary of patent laws—but these are enough to suggest that the book contains a very wide variety of information. The volume each year brings all its data up to the latest date, including a review of progress in the industry during the preceding year, the more important patents, and so on.

ALSO RECEIVED.

RUBBER Insulation for Conductors. By Fred. J. Hall. Reprinted from *Electrical World*. 25 pages. [Abstracted in *THE INDIA RUBBER WORLD*, January 1, 1908.]

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED FEBRUARY 4, 1908.

- N**O. 877,927. Annular knife. E. G. Hoffmann, New Rochelle, N. Y.
 877,933. Water bottle stopper. H. P. Kraft, New York city, and M. C. Schweinert, West Hoboken, N. J.
 877,961. Tire construction. W. F. Stearns, Batavia, N. Y.
 877,970. Pneumatic tire. O. Uhlmann, Taunton, Mass.
 877,978. Corset. M. Bachura, Collyer, Kans.
 878,015. Tubular metallic spring tire. J. K. Parker, Longbeach, Cal.
 878,039. Arch supporter. C. E. Bullard, Brookline, assignor of one-half to G. R. Stetson, New Bedford, Mass.
 878,070. Playing ball. C. T. Kingzett, Kensington, and E. C. Kingzett, Caterham, England.
 878,075. Pneumatic tire. H. D. B. Lefferts and E. De Camp, Orange, N. J.
 878,186. Piston rod packing. L. M. Byrnes, St. Louis, Mo., and G. H. Kendrick, Little Rock, Ark.
 878,254. Golf ball. W. Taylor, Leicester, England.

Trade Marks.

- 30,017. National India Rubber Co., Bristol, R. I. The word *Champion*. For rubber footwear.
 30,018. Same. The word *Colonial*. For rubber footwear.
 30,021. Same. The word *Vacation*. For tennis shoes.

ISSUED FEBRUARY 11, 1908.

- 878,572. Machine for making rubber footwear. A. C. Squires, Akron, Ohio, assignor of one-eighth to R. T. Dobson, Akron, Ohio; one-fourth to E. G. Lahr and two-sixteenths to C. N. Russell, Cuyahoga Falls, Ohio; one-sixteenth each to C. Senn, Monroe Falls, Ohio, N. Huber, Akron, Ohio, and H. E. Bowman, Cuyahoga Falls, Ohio; and one-sixteenth to C. H. Stahl and one-tenth to G. W. Gridley, Akron, Ohio.
 878,592. Wheel. C. Adams-Randall, New York City.
 878,730. Horseshoe pad. F. A. Johnson, assignor to T. A. Smith, both of Hot Spring, S. D.
 878,749. Manufacture of India-rubber boots and shoes. A. Schulze, Washington, D. C.

Trade Marks.

- 30,273. Carl Breiding & Söhne, Soltau, Germany, and Newark, N. J. The representation of a bird. For rubber footwear.
 29,097. The Goodyear's Metallic Rubber Shoe Co., Naugatuck, Conn. The representation of a bear. For rubber footwear.
 29,189. Hannoversche Gummi-Kamm-Compagnie Actiengesellschaft, Hannover-Limmer, Germany. The word *Shamrock*. For rubber tires.
 29,191. Same. The word *Shamrock*. For combs.
 29,261. Same. The representation of a shamrock within a circle surrounded by the name of the company. For rubber tires.
 31,018. Continental Caoutchouc Co., New York city. The words "*Keep your eye on Continentals*." For rubber tires and accessories.
 31,121. Pax Mfg. Co., Boston. The word *Pax*. For rubber nipples.

ISSUED FEBRUARY 18, 1908.

- 879,186. Cushion tire wheel. C. A. Marien, St. Louis.
 879,199. Pneumatic tire. B. F. Schirmer, Indianapolis, Ind.
 879,299. Syringe. [Vaginal.] W. R. Murphy, New York city.
 879,306. Rubber. [Overshoe.] H. O'Sullivan, Haverhill, Mass.
 879,312. Elastic vehicle tire. E. L. Perry, Paterson, N. J.
 879,360. Artificial hand. C. M. Broady, South Bend, Ind.
 879,378. Machine for turning rubber shells of platens. D. W. Filstead, assignor of one-half to A. R. Ames, both of Chicago.
 879,388. Article of rubber compound. W. Kiel, Butler, N. J., assignor to American Hard Rubber Co.
 879,610. Vehicle tire. P. E. Doolittle, Toronto, Ontario.
 879,732. Anti slipping tread for boots and shoes. N. J. Busby, Boston, assignor to L. A. Busby, Chelsea, Mass.
 879,768. Process for making shields or armor for pneumatic tires. O. A. Hensel, Pittsburgh, Pa.

ISSUED FEBRUARY 25, 1908.

- 879,892. Lawn sprinkler. H. T. Packard, Pasadena, Cal.
 879,981. Golf ball. C. L. Reade, Bexhill, England.
 880,060. Supporting sheath for train pipe coupling hose. G. S. Wood, Chicago.
 880,274. Cover for pneumatic tires. C. A. Brophy, Hinsdale, Ill.
 880,332. Wheel rim for pneumatic tires. C. S. Scott, Cadiz, assignor to F. A. Seiberling, Akron, Ohio.
 880,342. Golf ball. E. W. Thurlow, Northcote, Victoria, Australia.
 880,389. Surgical pad. J. A. Murray, New Haven, Conn., assignor to The Seamless Rubber Co.
 880,444. Abdominal supporter. M. Donaldson, Oklahoma, Okla.

Trade Marks.

- 21,744. R. P. Kinney, Huntington, N. Y. The letters *P. D. Q.* For tire repair plugs.

- 32,208. The Strobel & Wilken Co., New York city. The words *Rubber-Neck*. For tops.
 32,213. Ungarische Gummiwaaren-Fabrik-Actiengesellschaft, Budapest, Hungary. The word "*Tauril*." For rubber and asbestos packing.

ISSUED MARCH 3, 1908.

- 880,496. Syringe. [Vaginal.] F. C. Barnes, Fremont, Ohio.
 880,587. Apparatus for manufacturing pneumatic tires. T. Sloper, Devizes, England.
 880,610. Safety window catch. L. D. Way, Rugby, N. D.
 880,669. Bottle stopper. R. Keller, Detroit, Mich.
 880,756. Pneumatic horse collar. H. R. Rasmussen, Aztec, N. Mex.
 880,904. Back supporter. J. H. Mueller, Oakley, Ill.
 881,026. Spring cushion for automobile tires. J. P. Parsons and W. Fleming, Pittsburgh, Pa.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1906.

*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 5, 1908.]

- 22,545 (1906). Woven wire or chain band to prevent rubber tires from slipping. F. Banks, Southend-on-Sea.
 22,599 (1906). Hose nozzle for controlling the flow. H. W. G. Harding, Streatham, London.
 22,600 (1906). Stopper with rubber ring. M. Quillot, Montigny sur-Vingeanne, and Compagnie Francaise des Produits Fixator, Paris.
 22,216 (1906). Rubber band for tire covers. J. Dodon, Courbevois, France.
 22,634 (1906). Elastic tire with table core. J. Guetton, La-Tour-de-Millery, France.
 22,642 (1906). Tire treads molded with recesses to prevent slipping. J. and A. G. O'Brien, London.
 22,702 (1906). Tire formed of plate springs having tread blocks of rubber or other material. H. Bauer, Württemberg, Germany.
 22,719 (1906). Process of moulding tire covers. A. E. Harris, Southport, and Charles Macintosh & Co., Ltd.
 22,741 (1906). Puncture indicator for tires. T. and R. Sloper, Devizes, Wiltshire.
 22,793 (1906). Continuous elastic tire with independent air recesses. J. Ance and J. Jouglet, Paris, France.
 22,821 (1906). Plate for holding heel protectors. J. Leach, Old Colwyn, North Wales.
 22,909 (1906). Solid tire formed with cavity on the side next the rim. J. P. Elliot, Bellingham, Northumberland.
 22,947 (1906). Non skid device for solid tires for heavy vehicles. G. H. P. Wucherpfennig-Schubert, London.
 22,951 (1906). Pneumatic tire with flexible metallic strips imbedded in the cover. H. Theis, Cassel, Germany.
 23,003 (1906). Spring wheel with the tread resting upon rubber cushions, pneumatic or otherwise. S. Marples, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 12, 1908.]

- 23,058 (1906). Arrangement for securing tires to twin wheels or twin tires on other wheels. F. W. Brown, York.
 23,071 (1906). Tire formed of alternate rings of leather and rubber. J. Bowack, London.
 23,081 (1906). Elastic tire formed of sections of rubber and other material, arranged in circumferential and transverse series. Hartridge Tire Syndicate and A. W. Torkington, London.
 23,100 (1906). Elastic tire of alternate segments of rubber, leather and the like. A. W. Richards, London.
 23,138 (1906). Solid tire of alternate sections of rubber and other materials. A. Latimer, Alpertown, Middlesex.
 23,138 A (1906). Tire cover with foundation fabric of rubbered cord units, side by side, in one or more layers. Same.
 23,144 (1906). Tire cover with thickened thread. E. W. Williamson, Market Rasen, Lincolnshire.
 23,149 (1906). Apparatus for cleaning floors, the cleaning materials held to canvas lined rubber. H. Lester, Cardiff.
 *23,203 (1906). Repair plug for tire punctures. R. P. Kinney, Huntington, New York.
 23,212 (1906). Hose reel. F. J. Irwin, London.
 23,242 (1906). Tire of springs and rubber blocks. A. H. Huth, Hungerford.
 23,261 (1906). Non skid band for tires. H. Cooley, Leicester.
 23,273 (1906). Waterproof wrapper for spare motor tires. B. Brooks, Birmingham.
 23,331 (1906). Tire rim with detachable flange. A. J. Boulton, London. (Société des Pneumatiques Cuir "Samson," Paris, France.)
 23,347 (1906). Pneumatic tire. W. J. McMullen, Sligo, Ireland.
 23,359 (1906). Tool for removing tire covers. W. James, Birkenhead.
 23,399 (1906). Vehicle springs with rubber cushion to lessen shock. P. McKay, Murchison, West Australia.

- 23,592 (1906). Binding for the soles of "plimsoll" shoes. I. Frankenburg and I. Frankenburg & Sons, Ltd., Salford, Manchester.
- [ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 19, 1908.]
- 23,681 (1906). Method of reclaiming rubber by dissolving waste in oxygenic derivatives of terpenes melting below 180° C., and precipitating either the rubber or the impurities from the solution thus obtained in the usual manner. G. B. Ellis, London. (Les Produits Chimiques de Croissy (J. Basler et Cie., J.) Paris, France.)
- 23,715 (1906). Side slip preventing attachment for tires. H. W. Prange, London.
- 23,777 (1906). Non skid band for tires. C. W. Pradeau, London.
- 23,782 (1906). Spring wheel and a tire of rubber or metallic springs adapted to the same. G. R. G. Rowe, London.
- 23,786 (1906). Detachable tire rim. D. L. Laillault, Courbevoie, France.
- 23,788 (1906). Bottle stopper with rubber ring. J. Hermann, Cincinnati, Ohio.
- 23,876 (1906). Heel and sole protector. F. J. Walton, East Finchley, Middlesex.
- 23,939 (1906). Bottle stopper with rubber ring. S. A. Jackson, Heaton Moor, Lancashire.
- 23,954 (1906). Inflatable toys in the shape of animals and the like. T. H. Sample and Charles Mackintosh & Co., Ltd., Manchester.
- 23,963 (1906). Spring wheel and elastic tire. Boghos Pacha Nubar, Cairo, Egypt.
- 23,970 (1906). Tooth syringe for introducing medicaments. H. Noffke, Berlin, Germany.
- 24,106 (1906). Supplementary wheels with rubber tires to prevent side slipping of vehicles. S. W. Newcom, London.
- 24,110 (1906). Means for preventing side slipping. A. W. Leslie and H. Harris, London.
- 24,238 (1906). Solid rubber tire with two treads. F. C. Woods, London.
- 24,250 (1906). Means of preventing side slip. O. V. Thomas, London.
- 24,262 (1906). Pneumatic tire formed of an endless rope, with or without an inflated inner tube, and strengthened by helical ribs. R. C. Sayer, Bristol.

THE FRENCH REPUBLIC.

Patents Issued (With Dates of Application).

- 379,759 (July 9, 1907). E. G. Perkins. Rubber heel.
- 379,865 (July 12). Domougeot. Leather strip for interior of tire treads.
- 379,987 (July 18). C. Duboyal. Protective tread for tires.
- 380,107 (Sept. 28, 1906). E. Decauville. Apparatus and process of vulcanizing articles of caoutchouc.
- 380,110 (Sept. 29). E. Decauville. Apparatus for vulcanizing articles of caoutchouc.
- 380,021 (June 7, 1907). Alaluqetas. Pneumatic tire tread.
- 380,075 (July 19). F. C. Hood. Rubber shoe.
- 380,259 (July 25). Michelin et Cie. Process for the manufacture of pneumatic tires and covers.
- 380,276 (July 26). E. Lange. Pneumatic tire reinforced with inner spiral wires.
- 380,368 (July 30). Ganibong. Reinforced tire tread.
- 380,279 (July 27). J. R. Gammeter. Process and apparatus for vulcanization.
- 380,503 (June 24). Oudinot and Putois. Hydro-pneumatic elastic wheel.
- 380,693 (June 17). Whiteside Wheel Co. Vehicle wheel.
- 380,704 (July 10). M. Cesset. Removable tire rim.
- 380,735 (Aug. 10). R. Meriman. Elastic tire.
- 380,758 (Aug. 10). A. C. Brémond. Elastic wheel.
- 380,759 (Aug. 10). Hallam and Nittia. Vulcanizing press for pneumatic tires.
- 380,768 (Aug. 12). Delort and Taylor. Pneumatic tire in sections.
- 380,798 (Aug. 13). Macaulay and Hall. Pneumatic tire.
- 380,823 (Aug. 14). F. Hoyos. Pneumatic tire.
- 380,827 (Aug. 14). J. O'Brien. Armored tire.
- 380,831 (Aug. 14). A. Leonard. Sectional pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

RUBBER INTERESTS IN EUROPE.

DUNLOP TIRE PROFITS IN FRANCE.

THE profits of Française Société des Pneumatiques Dunlop, Ltd., for the year ended July 31, 1907, including income from investments, were £16,087 [=\$78,267.39]. The dividends were 6 per cent. on the preference shares, amounting to £2994, and 6 per cent. on the ordinary shares, amounting to £6183. The items of good will and patents have been written off the balance sheet. The report says that the French cycle trade suffered seriously during the year, with ill effects on the company's profits, and the motor tire trade has not developed with sufficient rapidity in France to make up for the loss of trade in the cycle tire department. The report was delayed, in order that the company might be in a position to pay the dividends promptly

upon their declaration. Much larger profits were earned at one time, the amount disbursed in dividends for the year 1896-'07 (ten years ago) being £29,843 [=\$145,330.96].

GREAT BRITAIN.

THE business carried on for a number of years as J. E. Hopkinson & Co., Limited, of the Pará Rubber Mills, West Drayton, Middlesex, has been purchased outright by Mr. John E. Hopkinson and will be continued by him.

W. T. Henley's Telegraph Works Co., Limited (London), report a net profit for the business year 1907 of £65,302 [=\$317,792.18], against £63,959 for the year preceding. The dividend is 4 per cent. on the preferred and 15 per cent. on the ordinary shares, as usual. The carry over is £23,650 or £1,300 more than last year.

The account of the Telegraph Construction and Maintenance Co., Limited (London), for 1907 show a net profit of £83,572 [=\$406,703.14] after charging the interest on debentures, as compared with £63,777 last year, being an increase of £20,794. The directors recommended the same dividend as last year (15 per cent.), and a bonus, making a total 17½ per cent., free of income tax. The business of the company during the year was very satisfactory, which is attributed to the fact that their equipment was steadily employed and that they were fortunate in the purchase of raw materials.

AUSTRIA-HUNGARY.

A RECENT writer on the rubber industry in this country states that 11 large factories, with a capital of 16,000,000 kronen [=\$3,248,000], employ 4,500 hands and produce goods valued at about 27,000,000 kronen [\$5,481,000].

GERMANY.

DR. FRIEDRICH A. TRAUN, of Dr. Heinr. Traun u. Söhne (Hamburg and Harburg), and Fräulein Friedel Pretorius, daughter of Commerzienrat Wilhelm Pretorius and wife, of Mainz, were married at church in the latter city on March 23.

ITALY.

A NEW company, Italian Spare Motor Wheel, Limited, was registered in London February 18, 1908, with £40,000 capital, to make and sell the Stepney spare motor wheel in Italy and most of the other countries in southern Europe, and in Egypt. Besides the parent company, in England, there were already two actual subsidiary spare wheel companies, in Germany and the United States, respectively.

FRANCE.

THE long established and successful house of A. Maurel et fils (Paris), with a factory at Boulogne-sur-Seine, producers of waterproof and soft rubber goods, has become Felix Ciret et Cie. The head of the house is now Monsieur Ciret, who has managed the business for some years. The senior Maurel and the executors of the son are silent partners.

ENGLISH BALATA BELTING FACTORIES.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We notice that in your issue of February 1, in an article on balata belting, you mention "The Manchester Balata Belting Co., of Clayton, Manchester, with which concern rumor associates the names of Messrs. Frankenburg." Will you kindly explain that neither Mr. Frankenburg personally, nor our company, have any connection whatever with this firm. Yours faithfully.

I. FRANKENBURG & SONS, LIMITED.

HERBERT STANDRING, Secretary.

Salford, Manchester, February 14, 1908.

THE weekly output of a single English make of rubber heels—"Wood-Milne"—is asserted to be 20 tons per week. A large factory is employed solely for this purpose, making both "revolving" and "stationary" heels in a great variety of forms, protected by a number of patents and registered trade marks.

Hoolihan's Fire Hose Specifications.

I HAD not seen Hoolihan for ten years, and supposed he had gone to that bourne from which no traveling man returns, when, to my delight—hale, hearty, with the old time twinkle in his eye—he entered the office. After mutual felicitations he said:

"Did ye know av me new appointment?"

"Not a word," said I; "tell me?"

"Sure th' govermint has formed a Fideral Advisory an' Inquisitorial Bureau fer th' supervision av fire hoase, an I am th' Thravelling Expert."

"What do your duties involve?"

"Everything, me bye, from tellin' th' manufacturer how to wash rubber, ter puttin' kid gloves on th' firemin so as not to sile th' hoase. It's a graate job. Just now I am requested be th' National Boord av Overwriters to dhraw up speccefications for the makin' av cotton, rubber-lined hoase."

"May I see them?" I asked, eagerly.



THE TRAVELING EXPERT.

"I'll rade some av thim," said he, with dignity.

"Firrst: Pit the naame av the maaker on ivery lenth of hoase, in black letthers wan foot high.

"Sicond: Pit the naame of the man that buys it on ivery lenth of hoase, with daate, price, and steenographic noates taken in sacret av the whole transaction, in black stincilled letthers wan thousandth av wan inch high.

"A. Ivery lenth of hoase shall be woven with 6 picks and 4 shovels in the filling.

"B. Where 2 jackets are used wan shall be a cardigan and the other a pilot jacket.

"C. All the cotton used in the hoase shall be tisted in the laberthry av th' Overwriters' Association and must not contain more than sivin per cent. av silk or other deeleterious substance.

"D. The internal diamether av the hoase shall be liss than the external diamether."

"That's fine," said I.

"Waaait," said Hoolihan; "ther's more and betther," and he read:

"RUBBER LINING.

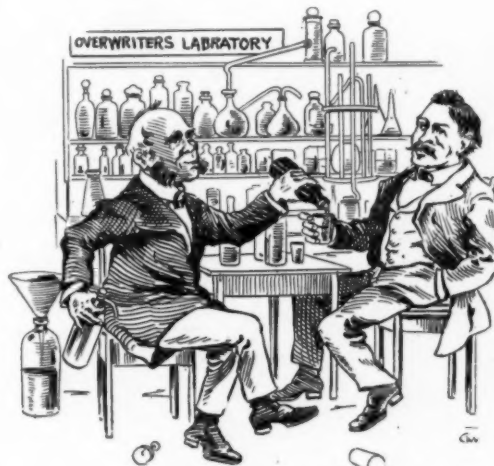
"A. Must contain one hundhred per cint. av pure rubber, gathered be union laabor.

"B. The wather used in washin' the rubber shall be filterhed an' distilled and show no thrace av acid. Club sody-wather

havin' a yellor cast and a smoky taste is distinctly con-dimned.

"C. Ahl tubes shall be lap jinted; the laps of the workers bein' proticted be ilecloth aprons as they sit at their work.

"D. Aich an' ivery tube shall have a continuous hole throughout its entire length. This hole shall be coated with special soapstone, supplied only be th' Overwriters' Labrytrys,

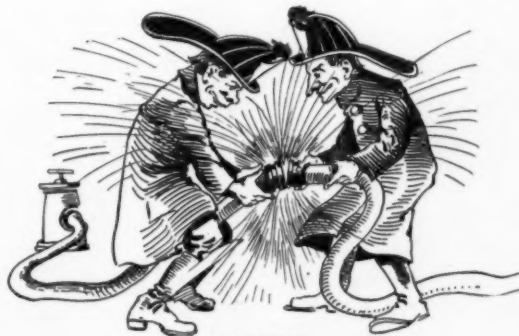


TESTING THE WATER.

so that after vulcanization the hole may be pulled out without tearin' av the rubber linin'.

"COOPLINGS.

"Cooplings shall be pit an boath av the two inds av aich hoase. No firemin shall be allowed to pit the ends av two hoases together except with cooplings. Manny caases av new-mony have resoolted from the min holdin inds of hoase to-



COOPLINGS.

gether to lave the wather thru during conflagrations. Such conduct is rhraprehinsible, perrilous, and waasteful.

"TWIST.

"Anny undue amount av twist is looked upon as showin' ingratitude on th' parrt av the manufacturer. The guarantees

should be so made, thot th' more he twists th' tighter he is cinched.

"ELONGATION.

"All tists for elongation shall be sacret. No man likes to have the worlrd know how much his leg has been pulled.

"WEIGHTS.

"Ivery manufacturer av hoase shall be required to wait from three to five years afther sellin' a lot to know whether he has made or losht money on the thransaction.



TWIST.

"CHEMICAL TESTS.

"A. Matther extractred be assetone shall not be more than wan quarther av wan per cint. av the chewin' gum presint in the laberathry at th' time of the tists.

"B. Th' saponifiable matther extractid be alcoholic potash shall be aquil to 3 caakes of soap for aich and ivery lenth of hoase.



ELONGATION.

"C. The minirel matther extractid, if it is gold, shall be the property of the laberathry.

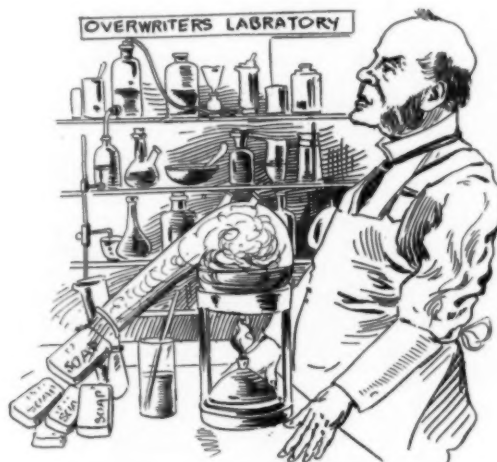
"FIZZICAL TISTS.

"A. As th' hoase is ter be used to carry coald wather, it should be tisted with hot stame ter be blown thro it, tin days at a time, at tin day intervals, for tin months.

"B. At the ordinary hydrant pressure the raate of flow through good hoase should be twinty gallons per second, for frish wather; for Hooniyadi wather, sivinty gallons per second.

"C. Lave the manufacturer stand with his ear at wan ind of a lenth av hoase, and a city official stand with his lips at the other ind. Half way bechune the two stands a man be

th' naame av John Doe. Be watchin the faace av the wan and the lips av the other, John Doe, hereinafter called the middleman, is able to tell whether the hoase is right, an how much (fiancial) pressure it will stand.



EXTRACTION OF SAPONIFIABLE MATTER.

"GARRANTEES.

"Aich length av hoase shall have a tin plate four inches square firmly affixed upon its outside. The furrst year this shall be tisted fur rust, and shall not show more than wan tint av wan per cint. The second year it must not show more than two per cint, the thurd year it shall not show more than foive per cint. Should anny av these per-centages be exceeded the manufacturer to agree to supply new lengths av hoase free av cost. Purchasers av hoase are advised to insist on a four-year garrantee covering this pint specially."

"About those tin tags on the hose, what is the use?" said I.

"Whisper me bye; thot is the best part av the whole. The purchaser can keep thim tags bright as silver, or black with rust. No matter how good they are or how honest the hoase it is out av the manufacturers' hands. Av he wants his tags kept bright, lave him make John Doe shine them up."



PRESSURE.

"Hoolihan," said I, "those specifications are as good, indeed, better than most; but don't you think this expert bossing of another man's business is being carried too far? Are you really helping either the maker, or the buyer, of hose by framing them?"

"It's me Bureau, and me Boord of Overwriters, and mesilf as an expert, that I am afther hilpin—dom the rist," said Hoolihan, genially.

The Progress of Rubber Culture.

PLANTING CONDITIONS IN CEYLON.

THE *Ceylon Observer* reports an interview with Mr. L. W. B. Davidson, who recently visited Ceylon after an absence of several years in England. He found that some rubber he planted 14 years ago had been mostly cut down at a time when those in charge of the property did not appreciate the value of rubber. One of the few surviving trees, he says, "has just given a crop of 16 pounds for the year." Mr. Davidson thinks that where tea has been interplanted with rubber the tea will gradually die out, and this will tend to keep up the satisfactory price of tea. On one estate in Kalutara Mr. Davidson found rubber produced at a cost of 1s. 0¼d. [=24½ cents] per pound, "including management and all charges f. o. b." Mr. Davidson remembers when the cost of producing tea in Ceylon was 2½ times as high as now, and he is hopeful that the cost of producing rubber can be further lessened.

The members of the planters' association in the Kalutara district of Ceylon reported at the end of 1907 having 23,060 acres planted to rubber alone—an increase of 8,722 acres during the year. The amount of rubber secured was 195,766 pounds in 1906 and 285,209 pounds in 1907. They estimate the 1908 production at 449,400 pounds. There are about 7,000 acres planted to rubber in the district but not represented in the association.

The Matale Planters' Association reports 19,723 acres planted to rubber, whereas at the end of 1905 it was estimated that in this district there were 1,359 acres of cacao interplanted with rubber and only 538 acres with rubber alone. The rubber yield for 1908 is estimated at 67,670 pounds.

Sir Thomas Lipton, who is so largely interested in tea planting, was a recent visitor to Ceylon, when he said in an interview published in the *Ceylon Observer*: "I intend materially to increase my financial interest in rubber. I do not think there can be a sounder investment. The uses of rubber will develop very

much yet, and the talk of a substitute being found for the purposes rubber is now used for is in my opinion all nonsense. Before I leave the island I shall have further involved myself in the rubber industry, and I have already a fair amount on my [tea] estates."

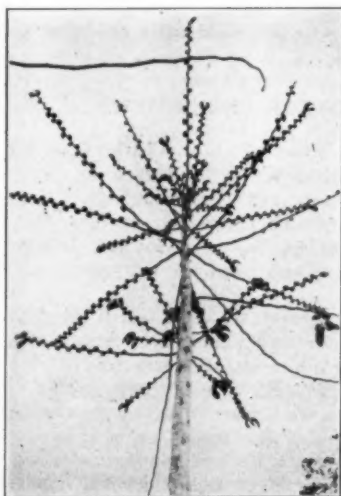
In a recent lecture on Ceylon before the Colonial Institute in London, Sir Henry A. Blake, formerly governor of that colony, predicted that by 1913 the Ceylon output of rubber would amount to 14,560 tons. The chairman who presided at the meeting said that all looked forward to the time when Ceylon rubber would pave London streets.

Rubber was quoted at Colombo on January 23 at 2.30 rupees [=74½ cents] per pound, against 3.87½ rupees [= \$1.25¾] one year previously. For several months prior to January 23, without regard to the decline in London, plantation rubber sold steadily at Colombo at 3.30 rupees [= \$1.07], owing to large contracts made at that price. These contracts having been completed, rubber at once fell a rupee on the pound.

Ceylon and the Federated Malay States have been visited lately by Mr. Fred T. Waterhouse, of Honolulu, as special commissioner of the Hawaiian Rubber Growers' Association. His object was to study rubber growing conditions generally, but especially as related to Cearà (*Manihot*) rubber, a species which grows rapidly and well in Hawaii. An account of the Hawaiian planters' association appeared in *THE INDIA RUBBER WORLD* December 1, 1907 (page 87).

RUBBER PLANTING IN NICARAGUA.

THE Tuma River Plantation Co., of Nicaragua, incorporated under the laws of South Dakota, November 5, 1907, with \$375,000 capital, have acquired an estate of 3,000 acres in the department of Matagalpa, Nicaragua, near the city of the same name. The company have considerable *Castilloa elastica* on the ground,



"Castilloa Elastica."

[Top of tree about 38 feet high, photographed in August, 1907, after leaves had fallen, showing appearance of seed branches.]



"Castilloa Elastica."

[Seed branch, natural size.]



"Castilloa Elastica."

[This view, of a man carrying two seed branches from a cultivated tree, will give a fair idea of the length of the latter.]

VIEWS SUPPLIED BY THE TUMA RIVER PLANTATION CO. OF NICARAGUA.

planted by a former owner, and intend planting up to 1,500 acres. The company state that rubber from four and five year old trees was gathered and sold last year, of the value approximately of \$3,000 gold, and that about 20,000 trees are now ready for tapping and will be dealt with this year. The neighboring property of the Nicaragua Improvement and Development Co., owned by practically the same interest, is reported to have 310,000 planted *Castilloa* trees standing. The Tuma company are encouraged by the action of the government providing for the introduction of Chinese coolie labor on an extensive scale. The officers of the company are C. G. Thomson, president; G. W. Sweetser, vice-president, and J. F. Mosby, secretary and treasurer; the general offices are at No. 15 Broad street, New York.

RESULTS FROM PLANTING "CEARA."

In a comprehensive report on Cearà rubber (*Manihot Glaziovii*), by W. H. Johnson, director of agriculture for the Companhia de Mocambique, says that the records he has compiled seem to indicate that, except in a very few instances, profitable results have not been obtained from the cultivation of the Cearà tree. "Still," he says, "it should be borne in mind that the Pará rubber tree was largely cultivated for a considerable period before a satisfactory method of tapping was discovered, and it is therefore quite possible that when the tapping of Cearà trees has been more carefully and generally studied, better results will be forthcoming." Summing up the results noted in Portuguese East Africa, Mr. Johnson concludes that if due consideration be given to the unfavorable conditions under which the trees for the most part have been grown, "the prospects of profitably cultivating the Cearà rubber tree in this territory are distinctly encouraging."

PLANTING IN THE GERMAN COLONIES.

DR. PAUL PREUSS, technical director of the Neu Guinea Compagnie, estimates the extent of rubber planting in the German colonies as follows, the figures relating (1) to the number of hectares, (2) the equivalent number of acres, and (3) the approximate number of trees:

	Hectares.	Acres.	Trees.
German East Africa	1,250	3,089	1,500,000
German New Guinea	1,100	2,718	603,000
Kamerun	700	1,730	900,000
Samao	450	1,112	260,600
Togo	80	198	41,300
Total	3,580	8,847	3,304,900

The planting in German East Africa is practically all "*manicoba*" (*Manihot Glaziovii*), but this species figures slightly in the other colonies, where *Hevea*, *Ficus*, *Castilloa* and *Funtunia* are under cultivation.

NANCHITAL PLANTATION CO.

THE Nanchital Plantation Co., incorporated under the laws of Arizona with \$300,000 capital authorized, is named after a large mountain near its property in the canton of Minatitlan, in Vera Cruz, Mexico, bordering on the Uspanapa river, and convenient to the port of Coatzacoalcas. The company report the ownership of 3,000 acres, of which 1,000 are intended to be planted to sugar cane, and the remainder to rubber and other crops. There are on the property some 4,000 rubber trees planted in 1902, which are reported to be making good progress. The officers are J. B. Huling, president; H. M. Scambler, vice president; and Oscar Meyer, secretary and treasurer, the offices being at No. 178 Monroe street, Chicago. Mr. Meyer was formerly an officer of The Aztec Plantation Co., an Illinois corporation formed to develop the tract known as "La Esperanza," which now has become the property of the Nanchital Plantation Co.

MAKING TAPPING KNIVES AT SHEFFIELD.

THE long established cutlery house of George Wostenholm & Son, Limited, of Sheffield, England, after having added tea pruners to their list of products on a large scale, have entered the field of supplying rubber tapping knives. Hitherto they have

supplied such knives to one customer only, but this is a patent article that they make to order and so are unable to supply other parties with it. They advise THE INDIA RUBBER WORLD, however, that at the present time they are applying themselves to the production of other patterns of rubber tapping knives, as so far the supply of these on the market have not seemed to meet the demand.

DIRECTORY OF RUBBER PLANTATIONS.

A SUBSTANTIAL volume of 206 pages, entitled "Rubber Producing Companies," has been brought out by Messrs. Gow, Wilson & Stanton (Limited), London, tea and rubber brokers, who were the first it is believed to attempt to classify and arrange briefly for the investor the leading features of companies planting rubber in the Far East. The first edition of their book two years ago listed only 35 companies, whereas the volume now under notice gives details regarding 151 companies, nearly every one of which is organized under British laws, and all capitalized in sterling. All are planting rubber, though some are still interested in tea or other products. Of these 61 are planting in Ceylon and India, 57 in Malaya, 25 in Borneo and elsewhere in the East, and 8 in Africa or South America. It is stated that the total amount of share capital issued by these companies is approximately £15,000,000 [= \$75,000,000].

This list, by the way, does not include a large number of companies, for the most part comparatively small, with headquarters in the Far East and whose capitals are in rupees or British dollars. In the case of each company is given the date of organization, lists of directors and the London office, capital authorized or issued, situation and area of the plantation, details of planting, report of production if any, and dividends to date—the whole forming a most useful work of reference for those interested. Another feature of the book is a directory of directors in the various countries, embracing no fewer than 370 names.

By the way, the *Financial Times* (London) has compiled from the records at Somerset House a list of the rubber planting companies registered there during 1907, totalling 62, with an aggregate capital of £5,263,260 [= \$25,613,654.79]. Of the companies referred to 1 is formed to work in Brazil, 6 in Ceylon, and 16 in Malaya, leaving 38, or more than half the number, to operate in other parts of the world, showing that British interest in rubber is no longer confined to the British colonies in Ceylon and the Malaya peninsula.

A GOODYEAR EXPERIMENT.

ONE of the few men living who knew Charles Goodyear well is Mr. A. D. Schlesinger, who has been so long associated with the hard rubber industry at College Point. Mr. Schlesinger's descriptions of the inventor's enthusiasm in connection with rubber, his utter disregard of time or money, and his belief that rubber could do anything and be of use everywhere, are most graphic.

For example: impressed with the belief that if ships' bottoms were covered with rubber they would never become foul, Mr. Goodyear ordered a great quantity of Russia iron, had it coated with hard rubber, and submerged it in salt water.

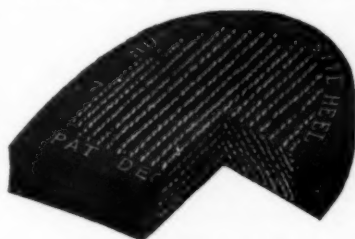
"After an interval the sheets were drawn up for examination, and," said Mr. Schlesinger, "we found out what hard rubber would do. The sheets were so covered with barnacles and weed that they looked like mats. The experiment cost hundreds of dollars, while the case might just as well be proved for ten."

CICELY Rubber Estates Co., Limited, pays an *interim* dividend of 15 per cent. on account of the year ending March 31, 1907. Ten per cent. was paid for the whole of the preceding year and 5 per cent. for 1904-05.

New Rubber Goods in the Market.

HUNT'S COMPOSITE RUBBER HEEL.

THIS anti slip heel is made, as the cut will suggest, of rubber, through which run strips of cotton duck parallel with each other and penetrating the heel from one surface to the other on a slant of 45 degrees. The composite heel is said to excel in wearing qualities a heel of rubber alone, while it is lighter and the cotton adds to the protection against slipping. This heel has flat surfaces with no corrugated fanciful designs, cavities or projections to fill up or wear off, and is made of the



HUNT'S RUBBER HEEL.

same substance and has the same wearing quality from bottom to top, so that it gives the same service as to slipping after being worn down to almost nothing. The slant of the cotton performs the service in the way of holding nails that is given by iron rings, washers and so on in some other rubber heels. [Frank W. Hunt, No. 393 Massachusetts avenue, Boston.]

EDISON ELECTRIC MILK WARMER.

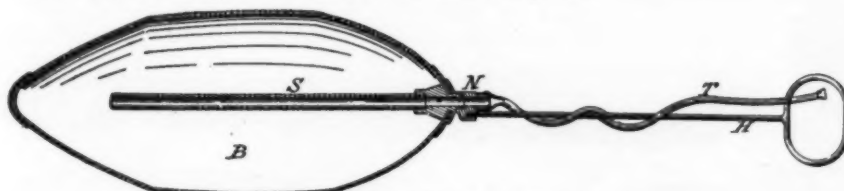
THIS illustration failed through some mischance to appear in connection with an article in this department last month headed "The Baby Milk Warmer." An important use for it is in keeping milk in a child's bottle at a proper temperature by means of an electric current, which current is readily obtainable in any household where electric lighting has been installed. [Edison Electric Illuminating Co., No. 360 Pearl street, Brooklyn, New York.] By heating the coil and putting it in a bowl of water the baby's bath may be prepared.



MILK WARMER.

"SAFESURE" GAS MAIN BAG.

THIS recently patented article is a safe, efficient, and economical bag for closing gas mains in case of a leak. As shown in the cut, the rubber bag is affixed to a rigid central stock which extends within the bag, the outer end of the stock being fitted



"SAFESURE" GAS MAIN BAG.

with a rigid handle and inflating tube. When the bag is to be used it may be wrapped around the central stock and readily inserted through the small opening in the side of the gas main. When the bag is wholly within the main and ready to be inflated, it may be held in position with one hand by means of the handle during inflation. When the bag is fully inflated the

handle may readily be unscrewed and removed. These bags are designed to go through the regulation size hole and two bags may be inserted through the same opening if desired. [Mineralized Rubber Co., No. 18 Cliff street, New York.]

THE "KRAETZER" BUCKLE.

A NEW buckle for use on rubber footwear illustrated on this page is the "Kraetzer" (pronounced Cratesir), which possesses

Women's
Empress.Men's
Gaiter.

THE "KRAETZER" BUCKLE.

several distinctive features. Not the least important of these is the absence of any raised part when the buckle is closed, and such as in some other makes of buckles are liable to tear women's skirts, not to mention wearing threadbare men's trousers. In other words, when this buckle is "set" on a rubber which is being worn it is absolutely flat and smooth, instead of having an extended tip. The two cuts herewith show the new buckle applied to specimens of footwear for women and men, respectively. The Hood Rubber Co. (Boston) are supplying footwear on which this buckle is used, and the manufacturers of the buckle are The Taunton Rivet Co., No. 3 Fern street, Taunton, Massachusetts.

A RUBBER SPONGE INVIGORATOR.

RUBBER sponges, that is, good ones, are not easy to make. Indeed, if the rubber trade of the world were put upon the witness stand under oath, there would be many confessions of costly experiments and failures. Among those that did not fail



RUBBER SPONGE INVIGORATOR.

in the attempt to make good sponges are the Faultless Rubber Co. (Ashland, Ohio), who almost from the first made all types of sponges of a quality that could not be criticized. The result is that they are doing a very large business in this line to-day. They make, for example, an oval sponge in seven sizes, sponge brushes in

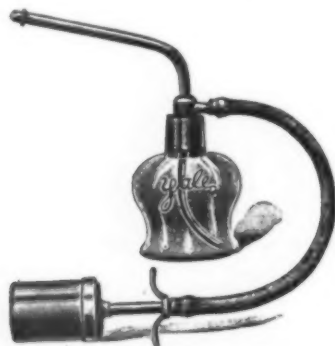
three sizes, and the Sponge Invigorator, an illustration of which is shown herewith. The invigorator is a flexible rubber strap with a loop handle at each end, and is made either with a rubber sponge surface on one side, which is called the "single" or both sides of the strap are faced with rubber sponge, the "double" invigorator.

PNEUMATIC BATTER'S HEAD PROTECTOR.

THE article shown in the cut herewith has been adopted in use by very many baseball players, including professionals of note. So many batters have been put out of the game by being struck in the head by pitched balls as to cause a demand for protection for the batter, which has led to the designing of the Pneumatic protector. This article is so designed as to protect every part of the head that is liable to injuries. Our feature of its construction is that it is supplied especially for either right or left hand batters. The article retails at \$5. [A. J. Reach Co., Philadelphia.]

BATTER'S HEAD PRO-
TECTOR.**THE "YALE" ATOMIZER.**

A NEW line of atomizers, adapted for spraying oil or water, is the "Yale," the distinctive features of which are well indicated in the accompanying cut. The chief point of difference as compared with other instruments of the kind is the pump which is used, instead of a rubber bulb, to furnish the pressure necessary for atomization. This hand pump is referred to as being readily operated and as capable of affording a stronger pressure than in types of atomizers used hitherto. The tubes and



THE "YALE" ATOMIZER.

tips can be sterilized by boiling. [Becton, Dickinson & Co., Ruth-
erford, New Jersey.]

MANDEVILLE STEERING WHEEL MUFF.

THE muff shown in this cut should become very popular with chauffeurs and motorists, particularly those who go out in cold or inclement weather. This muff is a leather fur-lined covering for the steering wheel, large enough to permit the same freedom in handling the wheel that one would have without it. At the post is a split ring which holds the muff in place, while running through it from the ring is a spring which shapes it in position so as not to interfere with the controls and which holds it up against the body. The muff protects the lap of the driver from the storm, keeps the hands warm and dry, and prevents cold winds from going up his sleeves. For summer use a lighter weight muff is supplied, made of rubber, and which is rain and wind proof. It can be carried in the tool box



STEERING WHEEL MUFF.

or under the cushion. [Mandeville Steering Wheel Muff Co.,
Bluffton, Indiana.]

"SPECIAL" RUBBER DAM CLAMP.

A NEW article for use in dental practice and designed by Dr. G. V. Black, is the rubber dam clamp illustrated herewith, and which has been designed for use in special situations—that is, on third molars and in certain cavities difficult to treat. One of the essential features of this clamp is its very strong spring. It is referred to as staying where it is put when once in position on a tooth, the strong spring being better than a weak one, particularly if the clamp must have some rough handling. The strength of the spring does not hurt the tooth if the clamp be put on and taken off carefully. This form is made in right and left shapes. [The S. S. White Dental Manufacturing Co., Philadelphia.]

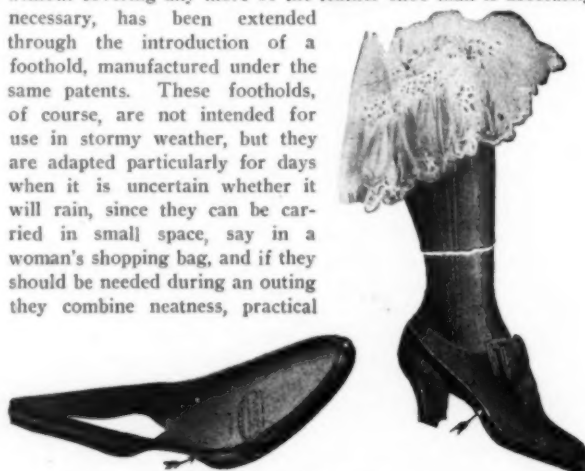


RIGHT.

LEFT.

THE "EVERSTICK" FOOTHOLD.

THE line of "Everstick" rubber footwear, a distinctive feature of which is the giving of adequate protection from moisture without covering any more of the leather shoe than is absolutely necessary, has been extended through the introduction of a foothold, manufactured under the same patents. These footholds, of course, are not intended for use in stormy weather, but they are adapted particularly for days when it is uncertain whether it will rain, since they can be carried in small space, say in a woman's shopping bag, and if they should be needed during an outing they combine neatness, practical



THE "EVERSTICK" FOOTHOLD.

invisibility, and protection. They do not rob a gracefully formed foot of its attractiveness, and there is no discomfort in wearing them. The Everstick foothold is made in different toes and in three colors—black, white and tan. These goods are supplied in handsome rubber lined pouches—one for each pair. The patents are controlled by The Adams & Ford Co., Cleveland, Ohio.

THE PNEUMATIC PENHOLDER.

ONE who is constantly using a pen is likely to welcome any device that will lessen the irksomeness of keeping the fingers



THE PNEUMATIC PENHOLDER.

so much in one position. It is with this object in view that the penholder shown in the illustration has been introduced on the market. The illustration indicates the position and the relative length of the rubber attachment. It is a particularly soft and yielding rubber, and so firmly attached that it is not likely ever to get out of place. There is need for little descriptive matter, but it may be added that the manufacturers use the phrase in connection with this penholder that "the soft pneumatic tip prevents writers' cramp." [American Lead Pencil Co., No. 43 West Fourth street, New York.]



HON. EBEN S. DRAPER
[Lieutenant Governor of Massachusetts.]



ARTHUR W. STEDMAN.
[President of the New England Rubber Club.]



GEN. CHARLES H. TAYLOR
[Editor of the Boston Globe.]

The New England Rubber Club's "Best Dinner."

THE annual banquet of the New England Rubber Club, held at the Algonquin Club, Boston, on the evening of March 11, adds one more to the series of successful functions of which the association has an unbroken list. There were about 200 present, and after a half hour's social they gathered in the beautifully decorated banquet hall and enjoyed one of the best dinners that the Algonquin has ever served.

Before introducing the first speaker, President Arthur W. Stedman spoke as follows:

"We are assembled here this evening to celebrate the addition of a New Year to the life of our association, the New England Rubber Club. Our organization was born with the new century, and began with less than 100 members. We came together primarily for the purpose, as pointed out in our constitution: 'For the promotion of social intercourse among gentlemen connected with the rubber industry, especially those residing in New England.'

"In the eight years of our existence we have grown to a membership of 230, and are steadily growing in numbers. We have extended our membership far beyond the borders of New England, so that our list of members includes representatives from every state in the Union where the rubber industry is carried on, and from Canada, and

from Europe. Our Club has proved to be what might be termed a silent arbitrator between competitors. It has brought together warring factions, and without the necessity of explanation or discussion, has settled by a handshake misunderstandings among men who have found each other good fellows after all, even if they are competitors. Thus, to this extent our Club has fulfilled its mission, and has warranted the enthusiastic support it has received.

"With the future opportunities opened to us through affiliations with older trade organizations, we have the promise before us of a far broader field of usefulness.

"During the few years of our life, we have had the support of many distinguished gentlemen, who by their presence at our banquets, and who by their eloquence, have encouraged us in the work of our organization. To-night we are again fortunate in having with us to encourage us, some of New England's most distinguished sons. Of these I have the great honor of introducing the Hon. Eben S. Draper, a gentleman, who like ourselves, is still burdened with the cares of business, but who, unlike many of us, is yet in the harness not because of the necessity of further accumulation of the 'mighty dollar,' but because of his vital interest in the thousands of



HON. LOUIS A. FROTHINGHAM
[Speaker of the Massachusetts House of Representatives.]



HON. GEORGE A. HIBBARD
[Mayor of Boston.]

wage earners who make up the industrial army which he has mobilized at that model manufacturing encampment, the Draper town, 'Hopedale.' Not only does he thus serve the wage earner locally, but broadly throughout the state, through the office of lieutenant governor which he dignifies. Gentlemen, I present to you the next governor of Massachusetts."

Lieutenant Governor Draper in a very happy vein "poked fun" at the club members concerning the alleged formal dinner which he was then attending, wondering what their "informal" dinners were, the point being that the spirit of friendly informality had so taken possession of members and guests that the social instincts of all present were very much in the ascendant—not that the diners were not orderly, for when the speaker outlined his ideas regarding such organizations as are called "trusts," the unionizing of the labor classes, state regulation of railroads, practical preventatives of public ownership, and subjects of that type, they listened most attentively and appreciated his telling points with generous applause.

The next speaker, the Hon. George A. Hibbard, mayor of Boston, was thus introduced by President Stedman:

"There comes a time when every city awakens to the realization of its needs, particularly for a competent, honest business like executive. 'Bigger, better, busier Boston,' once an alliterative catch phrase, has suddenly become an established fact. Friends and foes of the present city administration know full well who is responsible for this change. As there are only friends here to-night, perhaps his Honor, the mayor, will lay aside his habitual reserve, and tell us how he has done so much in so short a time."

Mayor Hibbard, the reform mayor of the city of Boston, is possessed of a visage that is a joy to the caricaturist. He knows it and enjoys it himself and his stories of jokes on himself were irrepressibly funny and put him instantly on the best possible terms with the diners. The mayor carefully avoided politics in his speech, because he said he did not know anything about them. He did, however, show where he stood on the question of municipal ownership, and incidentally made an appeal to the business men of Boston to take a more vital interest in the business end of their own city. At the close of his speech he was tendered a most enthusiastic ovation.

He was followed by the Hon. Louis A. Frothingham, former speaker of the Massachusetts house of representatives, whom President Stedman thus introduced:

"I will now call upon a gentleman who, while he has passed but a comparatively few years upon life's journey, has, during those few years, accomplished much. Ever ready to do his duty, he responded without hesitation to the call of country and of state, serving both with ability and with sacrifice of self. The people of Massachusetts are only waiting for the polls to open to declare him lieutenant governor. I take pleasure in presenting the Hon. Louis A. Frothingham, ex-speaker of the house of representatives."

Mr. Frothingham spoke but briefly as he claimed that he was most anxious to listen to the speech of the special guest of the evening, General Charles H. Taylor, of the *Boston Globe*, whom President Stedman introduced as follows:

"As our minds range far afield towards England, the cartoonist's likeness of 'John Bull' at once appears in the form of a jolly, rotund Britisher. If we think of our own country, we have depicted the lean, cadaverous, hawk visaged 'Uncle Sam.' So too, in New England a certain happy looking individual, alert appearing, of wondrous girth, wearing besides his expansive smile, a broad belt, upon which is displayed the mystic words, 'The largest circulation in New England,' typifying a great Boston daily, and that man is General Taylor. Look at him with the eye of intellectuality and you observe the girth, meet him as we do here and you cannot fail to enjoy the smile. Gentlemen, I am proud to introduce to you General Charles H. Taylor, proprietor and editor in chief of the *Boston Daily Globe*."

General Taylor spoke on modern newspapers and gave to the listeners an hour's talk that for rhetoric, interest, and sparkle, could not be improved upon. Although the hour was late when he began, none left the room, preferring to lose their trains rather than miss a word of the general's speech. When at last he sat down everybody was sorry, or, as one gentleman put it, "I could have listened to him all night."

OBITUARY NOTES.

ALFRED PEABODY, the youngest son of Henry W. Peabody, died on February 27 at the home of his father, in Beverly, Massachusetts, aged 28. Several months ago he bought a controlling interest in the Sterling Manufacturing Co., formerly of Salem and now of Gloucester, Mass., and engaged in producing a rubber substitute. He held the office of treasurer in this concern.

WILSON B. SOLLIDAY, a prominent resident of Easton, Pennsylvania, and a brother of Edward R. Solliday of Trenton, New Jersey, died March 8 at his home, aged 69 years. Edward R. Solliday is a member of the New Jersey Rubber Co., at Lambertville. The deceased was also an uncle of Quartermaster General C. Edward Murray, of Trenton, one of the proprietors of the Empire and Crescent plants in Trenton. The funeral of Mr. Solliday was held on the afternoon of March 10, from the residence of his son in law, W. F. Packer Allis, at Easton.

JOHN HARTER OAKLEY, father of Clifford H. Oakley, formerly general manager of the Grieb Rubber Co., and still identified with the rubber industry of Trenton, New Jersey, died at his home in Cleveland, Ohio, early in March. His death was caused by bronchial pneumonia.

The many friends of Mr. A. D. Thornton, superintendent of the Canadian Rubber Co. of Montreal, Limited, were shocked recently to hear of the death of Mrs. Thornton, which occurred very suddenly at their home, after an illness of only a few hours, following an entertainment at tea on the preceding afternoon of a few friends. Mrs. Thornton was Miss Susan Avery Nimmo, daughter of the Rev. Mr. Nimmo, of Brockville, Ontario.

FREDERICK A. CLAFLIN, treasurer and general manager of the Avery Chemical Co. (Boston), a concern numbering among its products a line of chemicals for the rubber industry, died in Boston on March 14, in his sixtieth year. Mr. Clafin was active in various business channels, but since 1897 he had given his whole attention to the Avery company, with which he held a nominal connection before. A son of the deceased, Alan A. Clafin, is president of the Avery Chemical Co.

NEW TRADE PUBLICATIONS.

THE SEAMLESS RUBBER CO. (New Haven, Connecticut) have issued a new catalogue of Fine Rubber Goods and Druggists' Sundries, liberally illustrated with cuts of their principal products. A marginal index facilitates ready reference to the catalogue. [6 7/8" x 9 1/4". 117 pages.]

THE DIAMOND RUBBER CO. (Akron, Ohio) issue a new catalogue of Mechanical Rubber Goods, embodying details regarding an increased line of products commensurate with the growth of the factory, which employs more than ten times as many workers as were on the payroll nine years ago. In addition to the staple and special lines of mechanical goods, the catalogue includes a number of items of hard rubber—a line not usually found in connection with this branch of the industry. [5" x 7". 127 pages.]

THE GUTTA-PERCHA AND RUBBER MANUFACTURING CO. OF TORONTO, LIMITED, issue their 1908-09 catalogue of Maltese Cross Rubbers, illustrated as usual with excellent cuts of their extensive line of boots and shoes. [3 3/4" x 6". 72 pages.]

ALSO RECEIVED:

A. J. REACH CO., Philadelphia.—1908 Spring and Summer Sports. 42 pages. Fall and Winter Sports, 1907-08. 34 pages.
Osgood Sayen, Philadelphia.—"Everlasting" Blow-off Valve. 12 pages.

The Rubber Trade in the Dominion.

CONSOLIDATED COMPANY'S SECOND ANNUAL.

THE second annual meeting of the shareholders of the Canadian Consolidated Rubber Co., Limited, held at Montreal, on February 26, was marked by a full attendance and complete harmony. The report of the board of directors, which was read and approved, appears in full below. The following shareholders were elected directors for the ensuing year: D. Lorne McGibbon, George W. Stephens, J. H. McKechnie, James Robinson, C. C. Ballantyne, A. Pringle, D. Coulson, V. E. Mitchell, W. R. Allan, E. W. Nesbitt, and Sherley Ogilvie. Later the official board was made up as follows:

President and Managing Director—D. LORNE MCGIBBON, reelected.
Vice President—MAJOR GEORGE W. STEPHENS, reelected.
Second Vice President—J. H. MCKECHNIE. (A new office.)
Chairman Executive Committee—JAMES ROBINSON. (A new office.)
Secretary-Treasurer—P. D. SAYLOR, succeeding F. H. Ward.
Assistant General Manager—FLEETWOOD H. WARD. (A new office.)

ANNUAL REPORT TO THE SHAREHOLDERS.

Your directors beg to submit to you the second annual report of the company, covering a period of ten months, from March 1 to December 31, 1907.

The work of reorganizing and systematizing the business of the subsidiary companies has proceeded steadily along the lines as originally laid out, with the view of bringing the progress of the various companies more fully under the practical control of the management of this company. A scheme has been devised whereby the monthly results of all the companies may be compared and the benefit of any special process in manufacturing, which might formerly have accrued to one company only, is now shared by all. The consolidation of the purchasing, which now is practically all done by this company, has resulted in a substantial reduction in the prices paid for much of the raw material used in the business.

Since the last meeting, the outstanding shares of The Granby Rubber Co., Limited, amounting to 250 shares, have been acquired and, subsequent to the end of your fiscal year, a mortgage in favor of The Royal Trust Co. has been placed upon the Granby property for the benefit of this company's bondholders, and in accordance with the deed of trust executed before Herbert M. Marler, notary, on October 9, 1906.

Some further transfers have been made by the shareholders of The Canadian Rubber Co., of Montreal, Limited, and there now remain only 904 shares outstanding, of which 45 shares are held by the directors.

During the year the necessary steps were taken to terminate the fiscal years of all the companies on December 31, and your directors believe that this course will commend itself to you as enabling them in the future to present to you, annually, statements for the full current year.

The individual statements of all the companies have been duly audited and when reduced to the basis of a financial year of twelve months show a total net profit at the rate of \$596,982.18 per annum, which exceeds the amount required to pay the interest on the company's bonds and the dividend on the preferred stock by \$311,870.18.

Total sales made by all the subsidiary companies aggregate \$6,659,598.81, showing a satisfactory increase for the year.

The general condition of the shoe trade has been quite satisfactory during the year, and from present indications it is believed that the year 1908 will show an acceptable increase in the business and earnings of your various companies.

It is with deep regret that your directors announce that owing to temporary illness your president and managing director, Mr. D. Lorne McGibbon, has applied for six months' leave of absence, which has been granted to him. Your directors feel that all the shareholders will join with them in wishing Mr. McGibbon a

speedy return to health. His labors in the interests of the company, from its inception to the present time, have been indefatigable, and the statement which is to be submitted to you at this meeting, and the present prosperous condition of all the subsidiary companies which this company controls, speak eloquently of the success which has attended Mr. McGibbon's efforts on behalf of the shareholders.

For the past year Mr. McGibbon's energies have been devoted to placing all the subsidiary companies on a thoroughly organized basis, and this has been accomplished so efficiently that the outgoing board feel that during Mr. McGibbon's enforced absence the only change which is necessary is to associate more closely with the active management of the company, Mr. J. H. McKechnie and Mr. James Robinson, members of the present board of directors, whose knowledge and experience in the rubber business is beyond question.

It is intended to appoint Mr. J. H. McKechnie, who for so many years managed the affairs of The Granby Rubber Co., Limited, second vice president, and Mr. James Robinson, who organized and made such a success of The Maple Leaf Rubber Co., Limited, chairman of the executive committee. Both these gentlemen have agreed to accept the positions offered to them and will give the present staffs of this company and the subsidiary companies all the advice and assistance in their power.

JAMES ROBINSON, Chairman.

NEW RUBBER FOOTWEAR PRICES.

NEW lists on rubber footwear were issued by the Canadian manufacturers on March 2—practically the same date as last year. On the whole list prices are a trifle lower, though on a number of items no change has been made. Prices are all listed at even figures, in order to meet the views of the retailers, some of whom objected to the odd list prices heretofore in vogue. An item listed last year at 78 cents figures now at 80, or 93 is changed to 95, but in other cases there has been a decline. Similarly, when discounts are applied, there are fewer cases of fractions of cents appearing. The discount to retailers is 20 per cent. against 15@3 per cent. last year, 20 per cent. in 1905-06, and 17 per cent. in the year before that. The difference is that the retailer will now pay 80 cents for an article listed at \$1 instead of 82½ cents last year. A special discount of 5 per cent. is allowed on orders placed before May 1 and shipped before November 1, 1908. A similar discount for early orders was allowed during the two years preceding. Besides these discounts and the customary discount for cash, the manufacturers allow a bonus rebate, to be governed by the volume of orders given by the purchaser during the season, the bonus being payable April 10, 1909.

IT PAYS TO WEAR RUBBERS IN MONTREAL.

THE rubber trade in Montreal have been delighted by a decision rendered by Mr. Justice Bruneau in a suit for damages brought against that city by a citizen who slipped upon a defective sidewalk and was injured. The judge condemned the defendant to pay \$75 and costs of the action. He observed, however, that as the plaintiff was not wearing rubbers, he could not expect the indemnity to which he might otherwise have been entitled, as he looked upon this as negligence on his part under the circumstances.

The decision also was viewed with satisfaction at the Montreal city hall. There is snow on the sidewalks all winter, and slipping on them is by no means unusual. If neglect to wear rubbers is to be recognized as contributory negligence, the authorities feel that the city's position in the position of defending damage suits will be greatly improved.

In printing the above it is not intimated that it does not pay to wear rubbers outside of Montreal.

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

THE warm spring weather now seems to make everything grow except business, judging from the reports concerning the condition of trade in San Francisco which the rubber merchants are giving out. It would appear from all indications other than what they actually say that business was fairly active; the same number of men are employed and there is the usual bustle and activity about the stores, and it may be that the spring weather alone is responsible for the listless statements which rubber men have been making about present conditions and the outlook. As Mr. Gorham said, when questioned as to the trade conditions: "I can't tell you anything about conditions. I have just eaten a big lunch, and I am not thinking of anything." Ordinarily after a big lunch a man is in his best humor for thinking up good things about his business, but stretchy warm spring weather makes a difference!

Throughout wholesale district, where most of the rubber houses are located, the board of health has posted notices in the stores requiring the tenants to keep the premises in a sanitary condition, and soliciting their coöperation in the war which has been declared on the rats. All of this is by way of assistance to the representative from the Government's health department, who has been sent here to give the city a thorough scrubbing, so that it will be in good shape when the Atlantic fleet arrives in May. There will be a great many sailor boys in San Francisco at that time, and as there have been rumors of bubonic plague in some of the ports of the Pacific coast, the authorities have started in to stamp out all breeding places of vermin.

The approach of spring has brought renewed activity in building and San Francisco has the appearance of being a very busy town. Tradesmen and mechanics find no difficulty now in getting employment. In many places where the mines were closed on account of a scarcity of funds work is being resumed, and mills are preparing to open. In the country districts conditions remain about the same, as the farmers have enjoyed prosperous seasons for several years, and they always get very satisfactory prices for their products. In commercial centers money is still a somewhat scarce article and business men are not reaching out for future possibilities quite as extensively as they might otherwise.

Mr. Bowers, of the Bowers Rubber Works, reports nothing out of the ordinary in business conditions. His firm are running along as usual, keeping their full force of men and running full time. "We do not notice much change in the business which comes in from the outside districts," he said. "It is not the country that feels this financial depression, any way. It is the big cities, which are the financial centers."

The new three-story brick building of the Revere Rubber Co.'s San Francisco agency, at Nos. 84-86 First street, is entirely completed, and fully equipped with stock and handling their regular business. The loss which the firm sustained in their recent fire did not interfere with their regular trade, and in their new quarters they are in a better position than before.

Mr. Kanzee, of the Phoenix Rubber Co., reports that they are still doing their best work on their non skidding tires, which seem to be unusually adaptable to San Francisco. The firm has a new member, Mr. Overton, of the Union Fish Company, a man well known in business circles here.

Mr. Sargeant, manager of the Gorham Rubber Co., reports business gradually improving. This firm has recently sent out a man to cover Arizona and Mexico and to see that the Gorham company gets well established. Mexico is a new territory to the company, but many mines are being opened there and reports so far indicate a good business. The firm is also beginning to reach out for business on the west coast of South America.

The large new building which the Goodyear Rubber Co. will

occupy on Market street is all but completed and it will not be long before the company can once more get located in permanent and modern quarters.

The Pacific Mill and Mine Supply Co., on Fremont street, report that demands for belting have greatly increased lately and that prospects are bright for a good season.

Mr. Perkins, of the Sterling Rubber Co., states that the first of the month started out remarkably well and that he is much encouraged with the favorable turn of business.

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

NOTWITHSTANDING the labor trouble at the works of the Lambertville Rubber Co., at Lambertville, the company are now operating their plant practically on full time, and with a force nearly equal to that employed before the shut down. It is said that only the general business depression prevents the company from increasing the force of workmen to even larger proportions. No appreciable depression has as yet been felt by the company, and its traveling men report sales as excellent. The entire boot and shoe force is kept filling orders, instead of making reserve stock, as is generally done at this time of the year. It is understood that since January 1 their shipments of boots and shoes have made an unprecedented record for these months. It is probable that about 60 per cent. of the present force are the old workmen, many of the union men having returned. Most of the girls in the overshoe department are at work as before. The scale of wages remains about as before the trouble. The Lambertville local of the Rubber Workers' Union maintains its organization, but apparently is neither active nor strong. Many of those remaining out have obtained positions elsewhere.

Justice Alfred Reed has handed down an opinion in the supreme court at Trenton in favor of James D. Brady, formerly of the Standard Rubber Co., of that city, and others, in the suit instituted against them by the United and Globe Rubber Manufacturing Co.'s, also of Trenton. The suit was brought to recover on a bond for \$6,000 given to the United and Globe companies by Brady and the other defendants to secure a debt owed to the complainant companies. The defendants demurred to the declaration filed by the United and Globe companies upon the ground that the Standard Rubber Co. should have been made a party defendant to the suit. The opinion of Justice Reed is to the effect that the non-joinder of the Standard Rubber Co., a necessary party defendant, gives proper ground for a demurrer. Judgment is therefore given for the defendants upon the demurrer, with leave to the United and Globe companies to amend their declaration and re-open the case.

Frank Hand, James Mooney, Leonard Stover, and George Barnett, boys living near the works of the Empire Rubber Manufacturing Co., were placed in the custody of a probation officer March 6 on the charge of stealing copper wire, as a result of a hearing in the Central police court. The Empire company had been missing copper wire for some time and on March 5 the boys were caught fishing a quantity of wire from the Assana pink creek in the rear of their works. They denied any theft at the Empire mills, but confessed to stealing wire from the Pennsylvania Railroad Co.

James D. Brady has severed his connection with the Standard Rubber Co. and has accepted a position as traveling salesman for the Trenton Rubber Manufacturing Co. He will cover New York state.

The Empire Rubber Manufacturing Co., in the second trial of their suit against Morris & Co., of Groveville, N. J., manufacturers of duck, were awarded a verdict of \$5,568.91, on March 18, by a jury in the Mercer supreme court. The case was first heard before Justice Alfred Reed in the supreme court several months ago and a verdict was given for the Empire company.

That concern, however, held that the verdict awarded was insufficient to cover the damages, and an appeal was taken to the court of errors and appeals. After hearing argument the latter court ordered a new trial.

The rubber company claimed that on July 10, 1903, they entered into a contract with Morris & Co., under which the latter were to furnish duck to the former at a specified price. The Empire company alleged that after some of the duck had been delivered the price of the raw material advanced and Morris & Co. failed to keep the contract. The complainant company averred that owing to this failure they were forced to buy duck in the open market and pay a much higher price for it. The suit was brought to recover the alleged loss, the total amount claimed being \$6,864.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

BUSINESS conditions evidently are improving. "Our sales during the months of February and March were greater than those made during the same months a year ago," said one of the officers of the Diamond Rubber Co. From the sales departments of the other Akron companies come similar reports. The demand for rubber goods, and especially tires, has been growing steadily since the first of the year. During the dull months of the past winter the various concerns, rather than lay off their employes, did not stop manufacturing their products until their warehouses were full. Now they are cutting down this surplus stock before resuming operations in full. But at all of the plants employes are being taken back every day, and from present appearances it will be but a comparatively short time before conditions will have reached the normal stage.

At the plant of the Firestone Tire and Rubber Co. all of the old employes are working full time. A night shift was put on during March. The secretary of the company announces that the sales for March are larger than a year ago.

The Adamson Machine Co., the incorporation of which was reported in the last issue of this paper, to succeed to the rubber machinery business of A. Adamson, has been organized with the election of Alexander Adamson, president and general manager; W. E. Slabaugh, vice president; R. B. Koontz, secretary; and C. J. Gilletly, treasurer. The incorporation of the company will in no way change their general business, except that it is their purpose to erect a new plant on a site of 5 acres recently acquired, and for which plans are now under consideration.

The Swinehart Clincher Tire and Rubber Co. have begun a suit in the United States district court against Frank F. Tillotson, cashier of the Citizen's Savings Bank of Detroit. Tillotson is charged with using a tire made by the Motz company, which infringes upon the Swinehart concave patents.

The Swinehart company are meeting with success in the manufacture of their adjustable and quick detachable truck tires and rims. They are something of a novelty in equipment for vehicles using solid tires, and a decided improvement over former attempts along this line.

The Diamond Rubber Co. have not yet entered extensively upon the manufacture of insulated wire, although orders are being received and filled in considerable quantities. It will probably be several weeks before this new department of the plant will be operated upon as extensive scale as has been contemplated.

The Akron Toy Co., consisting principally of members of the Swinehart Clincher Tire and Rubber Co., are manufacturing outfits for the game of Diabolo. Already the sales are reported as being unexpectedly large.

The leading Akron manufacturers of rubber tires will be represented prominently in the automobile carnival to be held in New York the first week in April.

SOUTH AMERICAN INTERESTS.

PROPOSED RUBBER LEGISLATION IN BRAZIL.

A BILL has been introduced in the Brazilian congress authorizing the government to grant a premium of 50 contos [= about \$15,000] to any one who shall invent an economic process for the extraction of rubber without causing injury to the trees, and for its prompt coagulation. To encourage the establishment of rubber manufactories in Brazil, the bill also grants to the first five rubber factories which within two years are established in the Acre territory and in the states of Amazonas, Pará, Bahia, São Paulo, and Rio de Janeiro exemption from the payment of import duties for a period of five years on all material and machinery imported for said mills.

THE COMING BRAZILIAN EXPOSITION.

MAJOR J. ORTON KERBEY, for some years United States consul at Pará, after which he traveled extensively in South America, and especially in the rubber region of the Amazon, about which he has written extensively, will be in attendance at the National Brazilian Exposition of 1908, to be held in Rio de Janeiro from May to December, inclusive. Major Kerbey will most likely, while in Brazil, revisit the rubber regions in the north, keeping in mind the collection of material for another book that he has in prospect. He is now connected with the International Bureau of American Republics, at Washington.

Better facilities for reaching Rio from the United States exist than formerly, and the management of the exposition will attempt to secure a large attendance from the northern republic as a means to bringing about closer relations between the people of the two countries.

Not a little interest has been expressed in the scientific expedition organized lately in Boston for exploring the southern watershed of the Amazon, under the leadership of George M. Boynton. It is planned to begin at Pernambuco in July next, and to devote five years to the work. The party starts with 35 members. No doubt they will add considerably to the existing stock of knowledge of the Brazilian rubber regions.

AN OVERWHELMING RESULT.

THE president of the esteemed Amazon Trading and Development Co. (Cleveland, Ohio) on March 7 took his pen in hand to write a few lines to his friends to advise that Mr. J. W. Ranger, of New York city, had just purchased \$100,000 of the stock of the company, "which means a great deal more than that simple statement might convey under ordinary circumstances." Likewise, Mr. Ranger "has also secured several blocks of this stock for his immediate friends." Furthermore, \$500,000 of the stock has been placed with an English syndicate. President Ewing writes among other things: "We began the sale of our stock on the tenth day of January and at once mailed out our prospectus; the result has been what you might call overwhelming: people have grasped the possibilities and realized a number of things." The company will not be surprised if their dividends should be double the par value of the stock every year, which is not so bad, considering that "this is not a speculative business." There is no record of any rubber having reached New York from the company's headquarters at Egos. P. S.—There is not much record of Egos.

SAMPLES of Pará rubber from the government plantations at Mergui, Burma, sent lately to London for examination were reported to compare favorably in composition and physical properties with samples of Pará rubber from Ceylon and Malaya.

FOLLOWING a fire in Pittsburgh, said to have resulted from the bursting of a rubber hose connecting a gas pipe and a small stove, the authorities have taken the stand that the use of such devices is fraught with danger, and a city ordinance has been proposed prohibiting the use of rubber tubing for the purpose referred to.

News of the American Rubber Trade.

UNITED STATES RUBBER CO.'S NEW FUNDING NOTES.

THE United States Rubber Co., during the past month, arranged for the refunding of their \$8,000,000 of 5 per cent. gold note indebtedness, by the issue of a like amount of notes due September 15, 1909. The new notes were offered for subscription at 97½ and interest, to yield 7 per cent. on the investment. They are secured by the deposit with the trustee of notes of the subsidiary companies, aggregating \$12,000,000. The trust agreement provides that the United States Rubber Co. shall not create any mortgage debt while these notes remain outstanding, and that the net cash assets shall at no time be of less value than \$15,000,000 over and above all indebtedness, except the funding notes.

The treasurer of the company states that "as of December 31, 1907, the net cash assets of the United States Rubber Co. and subsidiary companies, including its proportion of the net cash assets of the Rubber Goods Manufacturing Co., were \$24,296,000 over all liabilities other than the funding notes. The net earnings of the United States Rubber Co. for the year ending March 31, 1907, over all interest charges were \$4,590,382, including only \$689,308 of the Rubber Goods Manufacturing Co.'s profits of \$2,004,484. For the nine months ending December 31, 1907, the net earnings of the United States Rubber Co., and its proportion of the net earnings of the Rubber Goods Manufacturing Co., were over \$4,000,000, after the payment of all interest charges."

The funding notes of the United States Rubber Co. were first issued in 1902, being secured by a collateral indenture dated March 15. [The details of this arrangement appeared in full in THE INDIA RUBBER WORLD, May 1, 1902—page 245.] The balance sheet of the United States Rubber Co. for the year ending March 31, 1902, showed a deficit of \$1,110,344.15. No dividends had been declared during the year. The president in his annual report for that year stated: "The existence of a large floating indebtedness from the very inception of the United States Rubber Co. has been a menace to a thorough economic and independent administration of its affairs, and its funding has placed the company in a stronger and more secure position than ever before."

The notes first issued matured on March 15, 1905, by which time \$4,000,000 had been acquired and the remaining \$8,000,000 were renewed. It will be seen that the notes last issued run for only 18 months, instead of three years, as was the case with the earlier issues. Meanwhile the condition of the company has been vastly improved, as is indicated by the fact that the surplus reported on March 31, 1907, after the payment of large dividends, was \$6,126,706.44. The new notes were sold to Blair & Co. and the First National Bank, of New York, and Kidder, Peabody & Co., of Boston. The trustee is the Morton Trust Co., of New York.

The annual meeting of the United States Rubber Co. occurs this year on May 19.

The financial editor of the New York Sun, apropos of a recent snowstorm, said: "Years ago when every heavy rain or snow storm was made the basis of a movement in the United States Rubber stocks, weather such as yesterday would have sufficed for a rise in these issues of a couple of points at least. But the reverse happened, and on the sale of a few hundred shares Rubber common declined nearly 2 points. It would be interesting to know what the old speculative crowd think of what they must regard as a wasted opportunity. The last few years has certainly witnessed the cleaning up of a lot of the old time speculative counters."

RUBBER GOODS DIVIDEND.

THE thirty-sixth regular quarterly dividend of 1¼ per cent. on the preferred shares of the Rubber Goods Manufacturing Co. was payable on March 16 to holders of record March 7.

Among the securities sold at a public auction in New York on March 11 were \$24,500 in first mortgage 6 per cent. gold bonds of the Mechanical Rubber Co., at 102½@102¾. These bonds are a part of the issue of \$2,500,000, in 1893, a considerable part of which has now been retired. The Mechanical Rubber Co. was the first combination of mechanical rubber goods factories in this country, and served as the nucleus for the larger combination known as the Rubber Goods Manufacturing Co., both of which organizations were formed largely through the activity of Charles R. Flint.

THE RUBBER FOOTWEAR FACTORIES.

ALL the boot and shoe factories of The United States Rubber Co. were closed during the latter part of the past month, for the annual stocktaking and general repairs, in view of the ending of the fiscal year on March 31. At the New Jersey mill extensive repairs are being made, and at the factories of the Woonsocket Rubber Co. and the National India Rubber Co. new engines will be installed. THE INDIA RUBBER WORLD is advised that at the other mills necessary repairs will be made, and operations in all of them resumed as early in April as is consistent with the repair work in hand. The Fells factory of the Boston Rubber Shoe Co. closed on March 21, to resume work on April 6. The Edgeworth factory closed on March 18 and the time for reopening has not been announced. The Goodyear Glove factory at Naugatuck closed on March 14 for two weeks. Generally, however, the dates for resuming work have not been announced.

A TIRE INFRINGEMENT SUIT.

A SUIT in equity was filed March 5, 1908, in the United States circuit court at Hartford, Connecticut, against the Hartford Rubber Works Co. by the Metallic Rubber Tire Co., of Jersey City, New Jersey, alleging infringement of United States patent 609,320, which relates to the principle of a metal studded leather tread for rubber tires. The Metallic Rubber Tire Co. was incorporated in New Jersey March 14, 1899, and early in 1906 issued a circular stating that their counsel had been directed to bring suit against users of a number of non skidding tires, claiming infringement of patents granted to Calvin Thayer Adams and others, dating back to 1898. The Metallic Rubber Tire Co. at one time exhibited their goods extensively at the bicycle and motor shows, but do not appear to have been active of late.

PROFITS OF THE MACKAY COMPANIES.

THE annual report of The Mackay Companies for the year ended February 1, 1908, states that the corporation owns the whole or part of the capital stock of 102 prosperous cable, telegraph, and telephone companies in the United States, Canada, and Europe, including all the capital of the Commercial Cable Co. and the Postal Telegraph system, besides being by far the largest stockholder in the organization commonly known as the Bell Telephone Co. The income of The Mackay Companies during the year was \$3,830,390.38; dividends paid, \$3,655,216; expenses of administration, \$22,250.91; balance carried forward, \$152,923.47. The preferred shares issued to date amount to \$50,000,000 and the common shares to \$41,380,400.

RUBBER FACTORY AT RUTHERFORD SOLD AGAIN.

THE receivers of the Electric Rubber Manufacturing Co. (Rutherford, New Jersey), which company made an assignment at the end of 1906, after having made a sale of the property in June last, resumed possession of the same. Recently they received an offer for the purchase of the company from Albert Freeman, and on March 11 the receivers were directed by the chancery court of New Jersey, at Jersey City, to adopt the offer. Mr. Freeman is president of the Trident Tire Co., No. 1593 Broadway, New York.

THE RUBBER TRADE DIRECTORY.

THERE has been issued from the offices of THE INDIA RUBBER WORLD a Rubber Trade Directory for the United States, containing lists, by states and cities, of rubber goods manufacturers and distributors of such goods, the whole filling a substantial volume of nearly 300 pages. This work has been brought out in response to many requests for such a book of reference, and the publishers feel complimented by the favorable reception which the first issue has met. A letter from one of the most important rubber manufacturing companies in the country says:

"We wish to congratulate you upon the many excellent features which this book contains, and we believe that it is a publication which will be highly valued by the trade, especially so as its usefulness becomes more widely appreciated."

The publishers hardly hoped, in their first attempt, to score 100 in respect of either fullness or accuracy, and will welcome any suggestions which may tend to render a subsequent edition more complete in any respect.

RUBBER EMPLOYEES' ENTERTAINMENT.

THE fourth annual euchre and reception of the Gutta-Percha and Rubber Manufacturing Company Employes' Mutual Aid Association, at Arion Hall, Brooklyn, on the evening of March 3, was largely attended and proved a successful and enjoyable affair. This association was organized February 1, 1897, with a membership of 140, which has grown gradually to 250. Any employe of the company between the ages of 18 and 45 is eligible for membership. The initiation is \$1 and the dues 10 cents per week, with \$1 per year for medical services. The sick benefit is \$5 per week and \$100 is paid on the death of a member or \$50 on the death of a member's wife. The association has paid out over \$16,000 in benefits and now has over \$1,000 in the treasury. The officers are: William T. Shoup, president; John T. Applegate, vice president; Daniel H. Moore, treasurer; John Phalen, financial secretary; Oliver H. Penrod (No. 108 Stockton street, Brooklyn), recording secretary; Robert Nabet, sergeant at arms.

QUICK WORK AT THE DAVIDSON RUBBER FACTORY.

JUST before shutting down at 6 o'clock on February 20 the Brown engine at the Davidson Rubber Co.'s works met with an accident that broke both cylinder heads, cracked the cylinder and frame, and broke off the crank pin. The extent of the injury was such as to require a new engine, with the exception of the flywheel and shaft. The old engine had been doing first class service for years and the accident was due to no fault in design or construction. Mr. A. M. Paul, the president of the company, took immediate steps to replace the broken engine, and in the meantime keep the works running. A small Sturtevant engine was set up and connected to all the shafting it was able to drive on the two lower stories. A motor was installed to drive the two upper stories, the current for it being furnished by the Davidson company's electric lighting plant. These temporary installations furnished power to all departments except the mills and calendars. After looking over the engine field, a contract was placed with the Ley Construction Co. (Springfield, Massachusetts), for the installation of a new Allis-Chalmers engine, the removal of the old engine, and such changes in piping and foundations as were necessary to accommodate the new engine. The new engine has a 20 inch diameter cylinder and 24 inch stroke. It is a Reynolds-Corliss, girder frame and was shipped, without shaft or flywheel, by express from Milwaukee on March 3. This express shipment weighed about 20,000 pounds and was a record breaker of its kind. The foundations were in readiness to receive the engine on its arrival and on Monday morning, March 9, at 7 o'clock, the engine went into service and the mill room was again running to full capacity. In spite of this accident the works were not shut down at all and the time lost in the mill amounted to only eleven working days. The Ley Construction Co. left nothing undone to hasten the completion of their contract and finished it in a week less than their contract time, thus gaining a bonus for anticipated completion. Their engineer, Mr. Carey, was in attendance on the work, day and night. John O. DeWolf & Co., of Boston, were consulting engineers for the Davidson Rubber Co.

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MR. JEFFERY COMES TO HIS OWN AGAIN.

THE receivers of the Pope Manufacturing Co. have sold to Thomas B. Jeffery, of Kenosha, Wisconsin, what was formerly the "Rambler" bicycle factory, in Chicago. The plant was that in which the Gormully & Jeffery Manufacturing Co. originated and conducted for so many years the manufacture of the "Rambler" brand of bicycles. It was taken over in 1899 by the American Bicycle Co., which in turn was succeeded by the Pope Manufacturing Co. The same management originated—so far as America is concerned, at least—the type of tire known as the "G. & J.," which is still protected by patents issued to Mr. Jeffery.

AN ALLING RUBBER STORE IN NEW YORK STATE.

A RUBBER store is being opened at Schenectady, New York, under the style of Alling Rubber Co., which is a new company with Noyes E. Alling president and Wilford C. Minor secretary and treasurer. Mr. Minor has been local manager of the Alling Rubber Co. at Waterbury, Connecticut, in which position he will be succeeded by A. T. Jones. The new store is intended ultimately to be connected with the Alling Rubber Stores syndicate, of which there are already 12 branches in Connecticut, Massachusetts, and New Jersey.

NEW GARLOCK PACKINGS.

THE Garlock Packing Co. (Palmyra, New York) have recently taken out some new patents on various types of packing, including rubber backed flax and rubber backed hydraulic packings. The company are also putting out a new combination fibrous and asbestos sheet packing, which is referred to as being adapted especially to high pressure and superheated steam flange lines. The Garlock company maintain a domestic traveling force of more than 200 men in addition to taking care of large amount of business by means of agencies throughout the United States and several abroad.

BISHOP GUTTA-PERCHA CO.'S ANNUAL.

At the recent annual meeting of shareholders of the Bishop Gutta-Percha Co. (New York) these were elected directors: Henry A. Reed, Ellen I. Anderson, W. Boardman Reed, Henry D. Reed, and Louis F. Reed. The officers were reelected: Henry A. Reed, president; Henry D. Reed, vice-president; W. Boardman Reed, treasurer; Louis F. Reed, secretary.

TRADE NEWS NOTES.

THE Trenton Rubber Manufacturing Co. (Trenton, New Jersey) have just equipped an up-to-date laboratory, which they have put in charge of a competent chemist.

The rubber department of George Borgfeldt & Co. (New York) carries a varied line of hard and soft rubber goods produced by the Vereinigte Gummiwaaren-Fabriken Harburg-Wien, and by the factory of Fr. M. Daubitz, at Rudow-Berlin. The firm of Borgfeldt under the present style is now in its twenty-eighth year, but the business is really considerably older, having been founded by the late Mr. Borgfeldt in 1865.

The Republic Rubber Co. (Youngstown, Ohio) are referred to as having received an important order for rubber hose and connections for use in the construction of the Panama canal.

A sweet persuader "sent to lead you to some people who want orders" is "Sally," an heiress—that is, "she has a clear title to a mint of suggestions (all Goodrich rubber)." In other words, she is one of the Goodrich beauties in color sent to a few friends free, and "to appreciative strangers, 75 cents postpaid."

Frank W. Whitcher Co. (Boston) were awarded a medal at the Jamestown Tercentennial Exposition for their "Velvet" rubber heels.



OFFICE FORCE OF THE BOSTON RUBBER SHOE CO.

BOSTON RUBBER SHOE CO.'S OFFICE FORCE.

By the time the illustration on this page catches the eye of the observant reader, the Boston office of the Boston Rubber Shoe Co., in the well known Converse building, will be a thing of the past. As an historical record, therefore, this picture is of special value, as it gives a view of the entire office force at the time of the removal to their new quarters in Boston. Many pleasant things could be said of each individual in this group, and many too of the office force as a whole, and the picture will call them all to mind.



KEY TO THE GROUP ABOVE.

- | | | | |
|-------------------|------------------|-------------------|-------------------|
| 1. Mr. Ballard. | 8. Miss Tingley. | 15. Mr. Dewing. | 21. Mr. Leland. |
| 2. Mr. Solbery. | 9. Mr. Jones. | 16. Mr. Norris. | 22. Mr. Walsh. |
| 3. Miss Kenah. | 10. Miss Lynch. | 17. Mr. Palmer. | 23. Mr. Babcock. |
| 4. Mr. Wilson. | 11. Miss Wales. | 18. Mr. Converse. | 24. Mr. Cummings. |
| 5. Miss Hadley. | 12. Mr. Reilly. | 19. "Tony" Shep- | 25. Mr. Dorr. |
| 6. Mr. Phipps. | 13. Mr. Harding. | 20. Mr. Hill. | 26. Mr. Abbott. |
| 7. Miss Bengtson. | 14. Mr. Ryder. | | 27. Mr. Estey. |

THE NEW YORK FIRE DEPARTMENT.

ON another page of this paper are the details of contracts awarded during the past month for new hose for the fire department of New York city. Satisfactory bids for one of the items of hose at first advertised for not having been received, a new advertisement was published, for bids on supplying 20,000 feet of 3 inch 5 ply rubber fire hose, for the borough of Manhattan, to be opened on March 18. This advertisement was withdrawn, however, on account of the death of Hugh Bonner, the fire commissioner.

Mr. Bonner died on March 13, in his sixty-ninth year, after having served as head of the department for only about a month. He had been connected with the service, however, for most of the time since 1856, and was for a long period chief. He is generally credited with having contributed more than any other one man toward placing the force upon a high plane of efficiency.

Nicholas J. Hayes was appointed fire commissioner on March 20. He had previously filled that office for two years, under

Mayor McClellan's first administration, and is considered to have made a good record.

The city authorities have definitely appropriated \$130,000 for new hose for the borough of Manhattan and \$70,000 for Brooklyn, in addition to a general appropriation for hose at the end of January, making \$250,000 since the beginning of the year. The item of 20,000 feet of hose mentioned in a preceding paragraph has been advertised again.

TRADE NEWS NOTES.

THE Electric Cable Co. (New York), whose plant at Bridgeport, Connecticut, was partially destroyed by fire on February 18, are planning to rebuild on a larger scale. A portion of the old plant, which was not seriously injured, has been running since the fire.

Mr. H. H. Holland, of London, the European agent for the United States Rubber Co., was in New York and Boston recently, on his annual visit to the States, in connection with the business which he represents. It is understood that whereas little "rubber" weather was experienced in England during the past winter, conditions for selling galoshes were especially favorable in Norway and Sweden.

The Hartford Rubber Works Co. have discontinued their Pacific coast branches and appointed the Chanslor & Lyon Motor Supply Co. as their agents in California, Nevada, and Hawaii for the Hartford line of tires. C. H. Minto, who was Pacific coast manager for the Hartford company, has been retained by the Chanslor & Lyon company.

I. Goldberg, formerly connected with the waste rubber trade in Boston as a member of the firm Goldberg & Rathman, has opened a new house in that trade as I. Goldberg & Co., at Nos. 6-10 Storer street, in that city.

The tires on the taxicabs operated by the New York Transportation Co. are equipped with Dow nondeflation inner tubes, which are reported by the transportation company to be giving absolute satisfaction. The Dow Tire Co. (No. 104 West Forty-second street, New York), who make these tubes, are understood to be figuring on supplying them for use on the vehicles of several other important services in New York and other cities.

Samuel G. Rigdon, known to the rubber tire trade for a number of years as an active and successful traveling man, has become the general representative of the Republic Rubber Co. (Youngstown, Ohio.)

AFFAIRS OF THE ELECTRICAL COMPANIES.

The report of the Western Electric Co. (Chicago) for the year ended November 30, 1907, shows net earnings on sales of \$1,217,000. Dividends of 8 per cent., amounting to \$1,200,000 were declared. Sales for the fiscal year amounted to \$52,724,168, compared with \$69,245,332 for the previous year, a decrease of 23.9 per cent. The financial condition of the company has been well cared for, and at the end of the year the book value of capital shares figured out at \$225.21.

The report of the General Electric Co. for the year ended January 31, 1908, to be issued in May, will show it is reported, gross orders billed to customers of approximately \$70,000,000, and net earnings for dividends on the \$65,167,100 capital of about \$9,800,000, or 15 per cent. The share earnings in the previous fiscal year were \$8,427,842, equal to 13.2 per cent. on the \$63,572,800 stock outstanding at the end of that year. The company have adopted a policy of reducing prices on electrical apparatus, as the surest way of maintaining their position in the electrical field.

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for four weeks, ending March 21:

COMMON STOCK.

Week Feb. 29	Sales 1,455 shares	High 19 $\frac{3}{4}$	Low 17 $\frac{1}{2}$
Week March 7	Sales 475 shares	High 19 $\frac{3}{4}$	Low 18
Week March 14	Sales 2,900 shares	High 21 $\frac{1}{2}$	Low 19 $\frac{1}{2}$
Week March 21	Sales 9,900 shares	High 22	Low 19 $\frac{3}{4}$

For the year—High, 26, Jan. 14; Low, 17 $\frac{1}{2}$, Feb. 26.
Last year—High, 52 $\frac{1}{2}$; Low, 13 $\frac{1}{2}$.

FIRST PREFERRED STOCK.

Week Feb. 29	Sales 1,720 shares	High 79 $\frac{1}{2}$	Low 77 $\frac{1}{2}$
Week March 7	Sales 1,591 shares	High 78 $\frac{1}{2}$	Low 77
Week March 14	Sales 1,000 shares	High 85	Low 78 $\frac{3}{4}$
Week March 21	Sales 1,210 shares	High 85	Low 83

For the year—High, 88 $\frac{1}{2}$, Jan. 9; Low, 76, Feb. 19.
Last year—High, 109 $\frac{1}{2}$; Low, 61 $\frac{1}{4}$.

SECOND PREFERRED STOCK.

Week Feb. 29	Sales 135 shares	High 45	Low 45
Week March 7	Sales 125 shares	High 45	Low 45
Week March 14	Sales 655 shares	High 56	Low 50
Week March 21	Sales ... shares	High ..	Low ..

For the year—High, 61 $\frac{1}{4}$, Jan. 23; Low, 42, Feb. 21.
Last year—High, 78 $\frac{1}{4}$; Low, 39.

NEW INCORPORATIONS.

FRANK W. WHITCHER Co., January 16, 1908, under the laws of Massachusetts; capital authorized, \$250,000. The directors are Frank W. Whitcher, Frederick R. La Gallee, Stephen R. Nichols, and Sanford Crandon, Jr., all of No. 14 Albany street, Boston, and William M. Harriman, of Chicago. This corporation acquires the shoe findings business founded in Boston in 1826 by John Tillson and continued under various names, and since 1893 as Frank W. Whitcher & Co. There is really no change in management involved. The house of Whitcher has taken important rank in its rubber heel business.

Monroe Rubber and Metal Co., January 22, 1908, under the laws of New York state; capital, \$7,000. To deal in rubber and other waste, at Rochester, N. Y. Incorporators: Abraham E. Hork, Morris Rosenblum and Wolf Miller.

The Hudson Rubber and Tire Co., March 2, 1908, under the laws of New Jersey; capital authorized, \$100,000. The object is to manufacture rubber tires. Richard Shippen is president; August H. Petersen, vice-president, and Edward Shippen II., secretary and treasurer, and the head offices at No. 1121 Clinton street, Hoboken, N. J.

Leakless Motor Tube Co., February 19, 1908, under the laws of New York; capital, \$60,000. To make a compound for sealing tire punctures. Incorporators: Edmund S. Hopkins (No. 17 Battery place), S. K. Albright, and C. H. Bennett, all of New York city.

White Auto Tire and Rubber Co., February 4, 1908, under the laws of Illinois; capital, \$50,000. Incorporators: E. P. White, C. C. Bartlett, and William W. Smith, represented by Morrison,

Rost & Smith, attorneys, of No. 22 Fifth avenue, Chicago. Mr. Smith is at present secretary and treasurer of the corporation.

General Tire Repair Co., March 13, 1908, under the laws of New York state; capital, \$2,000. Incorporators: Charles W. Rehmann, Joseph W. Rehmann, and John F. Rehmann, all of No. 220 West Forty-eighth street, New York.

THE RUBBER FACTORY AT BATAVIA.

THE Sweet Tire and Rubber Co. (Batavia, New York) are now making a general line of mechanical goods and mold work, in addition to their regular output of automobile tires and inner tubes. They are making wrapped tread tires, called the "Batavia



PLANT OF THE SWEET TIRE AND RUBBER CO.

clinker," as well as a bevel edged tire protector. One of their specialties is the "Genesee" red sheet packing. The management is in the hands of Mr. George E. Perrine, who is secretary and treasurer of the company.

TRADE NEWS NOTES.

THE directors of the Boston Woven Hose and Rubber Co. have declared a semi annual dividend of \$4 per share on the common stock, payable March 16, 1908, to holders of record March 5.

The Tremont Rubber Co., of No. 218 Congress street, Boston, who have been engaged hitherto in handling rubber footwear, have organized a department for the sale of mackintoshes, raincoats, and oiled clothing.

Morgan & Wright (Detroit, Michigan) have added to their line a corrugated motorcycle tire of the detachable double clincher type, with a casing formed to fit the rim, instead of being flat, as is usual. The inner tube is made of several instead of one ply of rubber.

Jacob Pollikoff, a dealer in scrap rubber at No. 18 First avenue, New York, since December, 1904, had filed a petition in bankruptcy, with liabilities \$6,818 and nominal assets \$2,900.

The directors of the Corn Products Refining Co. on March 17 declared the regular quarterly dividend of 1 per cent. on the preferred stock and an extra dividend of 1 per cent., instead of 3, making 5 per cent. instead of 7 per cent., as usual, for the fiscal year. The dividend is 7 per cent. cumulative. This is stated to be due in part to the unexpected outlay made necessary by the new food laws, which item amounted upward of \$500,000.

The directors of the General Electric Co. have declared their regular quarterly dividend of 2 per cent., payable on April 15.

S. B. Thing & Co., of New York, who handle the Hood brands of rubber, are referred to as having made an addition of 347 new accounts to their books during the season now closing.

The Diamond Rubber Co.'s branch at Pittsburgh, Pennsylvania, has been removed from No. 16 Wood street to a new store, designed especially for their use, at No. 6122 Centre street.

The Hayes Rubber Co., of No. 57 Warren street, New York, is a new company formed to handle tires and automobile accessories. It is headed by Frank P. Hayes, who has been active in the rubber tire trade in New York for several years.

HARDMAN RUBBER CO.—SALE OF PLANT.

THE receiver for the Hardman Rubber Co. (Belleville, New Jersey), who advertised for bids for the plant of that company to be opened on March 14, failed to effect a sale of the property as a result. Later, however, a bid was received for the entire machinery and equipment from John E. Van Duke, as agent, and the court of chancery ordered that the creditors of the company should show cause before that court, at Newark, on March 31, why the bid should not be accepted. The intending purchasers are understood to be thoroughly acquainted with the rubber industry, and to be in a position to consider propositions from persons prepared to invest additional capital in a modern and well equipped going plant.

ORIENTAL RUBBER CO.—ASSIGNMENT.

DOMINGO M. MONJO, of Elizabeth, New Jersey, president of the Oriental Rubber Co., has brought a suit in the New Jersey court of chancery at Trenton for the appointment of a receiver for the company. He claims the company is bankrupt and that for some time the business has been conducted at a loss. Following the filing of the bill, on March 23, Vice Chancellor Howell made an order appointing Frederick R. Moddock, of Newark, receiver for the concern. The company is capitalized at \$125,000 and the present directors are Otto H. C. Arendt, Edward A. Monjo, and the complainant. The bill says that the company owes President Monjo \$5,100 and has no ready money to continue the business. It is further shown that it has been compelled to lay off many of the employes. According to the bill the assets aggregate \$71,300, as follows: The plant on Searing street, Newark, \$52,000; stock and manufactured goods on hand, \$13,000; book accounts, \$6,100; cash, \$200. The liabilities are given as follows: Mortgage on plant, \$6,000; bills payable, \$11,500; accounts payable, \$11,900; debts for money loaned and advanced, about \$6,500.

TRADE NEWS NOTES.

MR. E. P. CAMP has been appointed manager of the New York branch of the Cincinnati Rubber Manufacturing Co., at No. 136 Liberty street. He is well acquainted with the trade in New York and its vicinity, through his connection hitherto with the Voorhees Rubber Manufacturing Co.

The 10,000 employes of the General Electric Co. (Schenectady, New York), it is reported, after having worked for some two months four hours a day, are about to go on full time. This indicates that the insulated wire department, as well as the others, is well supplied with orders.

Mr. Arthur W. Stedman, of George A. Alden & Co., Boston, and president of the New England Rubber Club, has been very ill with pneumonia at the Seapoint Club, Hyannis, Massachusetts, where he went for a few days' rest. Through the constant and skillful care of his cousin, Dr. J. C. Stedman, he has been pronounced out of danger and well on the road to recovery.

The annual meeting of the shareholders of the Rubber Goods Manufacturing Co., a corporation under the laws of New Jersey, will be held at noon on Thursday, April 9, at the registered office of the company, in Jersey City.

There is probably no better known man in the waterproof clothing trade than Charles F. Hamilton, his beginnings as a marketer of his special lines occurring back in 1883, when he sold gossamers for the Standard Rubber Co. Later, it will be remembered, he was with the Gossamer Rubber Clothing Co., and still later the Goodyear Gossamer Rubber Co., which, in 1887, became the Apsley Rubber Co. In all these years he was accounted one of the most brilliant and popular salesmen in his line. It will probably interest his friends to know that, to use a stock expression, he has "quit the road" to take charge of the business of the Rubber Manufacturing and Distributing Co., now opening a store in Spokane, Washington.

PERSONAL MENTION.

THE trade will be glad to learn that W. H. Lockwood, formerly treasurer of the Davidson Rubber Co., has returned after spending the winter in the South fully recovered in health.

Mr. S. H. C. Miner, hale and hearty with the flush of health on his cheeks and his gray eyes alight with energy and purpose, spent two weeks in March in the city of Boston, where he has large interests. He is planning to move from his winter home in Montreal (the Windsor Hotel) to his home in Granby about the first of May.

Of the guests at the New England Rubber Club dinner on March 11 was a notable contingent from the Pacific coast, numbering Mr. Richard H. Pease and his son, of the Goodyear Rubber Co., and Mr. H. C. Norton, vice-president and manager of the Pacific Coast Rubber Co., all from San Francisco, and Mr. Franz Richter, of the Washington Rubber Co., of Seattle, Washington.

When General Taylor, at the New England Rubber Club dinner, was describing some financial deals between Jay Gould and Tom Scott, and incidentally having fun with the memory of both of these magnates, he was unaware that a valued member of the New England Rubber Club, called by a few of his intimates "Scotty," a grandson of the second named gentleman, sat directly in front of him and if one could judge by his broad smile, enjoyed that part of the entertainment as much as anybody.

The Hon. L. D. Apsley is justly proud of the fact that he was bidden to Lockhaven, Pennsylvania, on March 12, to celebrate the birthday of his father, Mr. George Apsley, who is 90 years old and still in active business.

Colonel Harry E. Converse, president of the Boston Rubber Shoe Co., is spending a few weeks on the Pacific coast.

Messrs. George A. Lewis, president, and La Vete C. Warner, superintendent, of the Beacon Falls Rubber Shoe Co., were recently enjoying a vacation at Camden, South Carolina.

Mr. D. Lorne McGibbon, president of the Canadian Consolidated Rubber Co., on account of impaired health, has applied for and received a six months leave of absence, which he intends to

F. F. Schaffer, superintendent of the factory of the Goodyear's India Rubber Glove Manufacturing Co. (Naugatuck, Connecticut), was recently on a vacation at Camden, South Carolina.

Mr. A. M. Stickney, president of the Wellman Co. (Medford, Massachusetts), who since his recovery from pneumonia has suffered considerably from a bronchial difficulty, has gone South, his trip embracing Nassau and southern Florida. His many friends the world over wish him a speedy recovery, which a warmer climate and his wonderful constitution should guarantee.

Mr. B. T. Morrison, treasurer of the Reading Rubber Manufacturing Co. (Reading, Massachusetts), is back from Europe, and although he has been somewhat under the weather it is gratifying to know that he has fully recovered his health.

Mr. E. B. Townsend, brother of the president of the Manhattan Rubber Manufacturing Co., and one of the directors, has just returned from a midwinter vacation to Jamaica, Panama, and the Windward Islands.

Martin Van Buren Jefferson, who died at his home in Worcester, Massachusetts, on March 11, had been for a number of years a director in the Rubber Manufacturers' Mutual Insurance Co. He was president of the Cotton and Woolen Manufacturers' Mutual Insurance Co., and a director in the various other mutual companies in the group comprising the two named here.

B. A. Zacks & Sons (Erie, Pennsylvania), large handlers of waste rubber, have just taken possession of larger new quarters, at Twentieth and Ash streets. Mr. Henry Zacks, who has been traveling for the house for several years, has been admitted to the firm.

TRADE NEWS NOTES.

The Standard Welding Co. (Cleveland, Ohio) have arranged to take on the production of the Midgley motor car rim.

It is rumored that Mr. Harrison C. Frost has secured an option on a well known rubber reclaiming plant and is offering part of the stock as an investment.

The Continental Caoutchouc Co. have arranged for their representation at Buffalo, New York, by the Centaur Motor Co., No. 59 Franklin street.

Pirelli & Co., the Italian rubber manufacturers, issued from their New York branch, No. 296 Broadway, on March 15, a revised price list of their tires.

T. & S. C. White Co. (New York) notify the removal of the office of Bergen Port Sulphur Works to No. 100 William street.

The Bay State Machine Co. (Erie, Pennsylvania), manufacturers of rubber machinery, have been absorbed by the Erie Pump and Engine Works, which concern has not yet decided as to whether they will continue the rubber machinery department.

The B. & G. Rubber Co., manufacturers of automobile and bicycle tires and packings, are a new concern located at No. 519 French street, Erie, Pennsylvania. Anthony Birnbaum and R. F. Gunther compose the firm. The last named has had an extensive experience in the rubber manufacture, having been for several years with Whitehead Brothers at Erie, together with other prominent rubber manufacturing concerns.

The India Rubber Specialty Co. (Erie, Pennsylvania) have added to the lines of goods handled by their house an extensive assortment of mechanicals.

The products of the Lake Shore Rubber Co. (Erie, Pennsylvania) are being marketed in Chicago by The McIlroy Hose and Belting Co.

The Erie Rubber Works (Erie, Pennsylvania) manufacture a complete line of government standard bevel stoppers, in addition to which they are now putting on the market a new patent self-sealing stopper, the special feature of which is its resistance to internal pressure, rendering it especially adaptable for corking bottles containing charged liquids. The management of this company is in the hands of Mr. F. E. Hopkins, who was connected for some years with the Lake Shore Rubber Co. and later with the Pennsylvania Rubber Co.

Mr. Maximilian Ekert, of Ekert Brothers, Hamburg, Germany, importers of rubber footwear, is visiting the United States in search of any novelties in the rubber or shoe findings lines. Messrs. Ekert Brothers are doing a very important business on American goods, especially rubber shoes, in Europe, and any manufacturer wishing to do business on the continent may communicate with Mr. Ekert, in care of the United States Rubber Co., New York.

A petition in bankruptcy has been filed in the United States court against Leon Rubay (a corporation), of New York, dealers in automobile supplies. Two of the subscribing creditors are rubber tire concerns with claims aggregating \$85. Peter Zucker has been appointed receiver. The company was incorporated November 20, 1905, with \$25,000 capital authorized.

The regular quarterly dividend of 2 per cent. on the capital of the Boston Belting Co. is payable on April 1.

The regular quarterly dividends of 1½ per cent. on the preferred and 2 per cent. on the common stock of the United Shoe Machinery Co. were payable on March 31.

The Star Rubber Co. (Akron, Ohio) have begun the manufacture of an extensive line of seamless goods. They have recently built a five-story fireproof factory on modern lines, and equipped it with the best machinery and apparatus. The whole force of employes is made up of experienced rubber men from Akron factories. The sales department is in charge of Mr. A. G. Humphrey, who has been familiar with the trade for a number of years. The general manager of the Star Rubber Co. is Mr. J. D. Slater, who likewise has been identified with the rubber business for a considerable time.

TRADE NEWS NOTES.

The G. & J. Tire Agency, in Philadelphia, has been removed to larger quarters, at Nos. 713-715 Broad street.

The Fairmount park commission, in Philadelphia, have passed a resolution forbidding the use of tire chains on automobiles within the park limits.

A large number of American manufacturers were represented at the automobile and Sportsmen's Show, at Toronto, during the last week in March. All the tire manufacturers and the leading tire distributors in the Dominion were represented, as well as a few American firms, notably the Diamond Rubber Co.

The Rochester Footwear Co. (Rochester, N. Y.), incorporated November 12, 1907, under the laws of New York, are reported to be planning to increase their capital from the original figure (\$25,000) to one much larger. They are referred to as having a good trade in the "Lady's Companion" overshoe, the invention of S. Schwartzchild, the president of the company, and a modification of what was called the "Emergency" shoe. This was marketed for a while by the Emergency Rubber Co., which has been superseded by the business referred to above.

The United Shoe Machinery Co., it is reported, are to build more of their machines in England, to prevent revocation of their patents under the new law in that country, for which purpose they are enlarging their works at Leicester.

The Hohmann & Maurer Manufacturing Co. (Rochester, New York) are specializing on a new temperature regulator, adapted particularly for use on hydraulic and other presses in rubber mills, many of which are already equipped with this device, and with satisfactory results. The purpose of the device is to control the temperature automatically.

An exceedingly good piece of work of its class is the "American Shoemaking Directory" for 1908, being the fifth annual edition of this work issued from the office of *American Shoemaking* (Boston). It is a complete list of manufacturers of leather shoes in the United States and of tanners and the principal machinery and shoe supply firms.

The Pennsylvania Rubber Co. (Jeannette, Pa.) have filed with the secretary of state at Harrisburg, a certificate of increase of capital authorized from \$750,000 to \$1,500,000.

The Canton Rubber Co. (Canton, Ohio) are specializing on linemen's gloves, in which they are doing an extensive business. A prominent electrical concern which tested these gloves states that "The linemen's glove designed to withstand 10,000 volts, which was submitted for test broke down at point of middle finger at 22,000 volts. On measuring thickness at point of breakage, we find that the glove withstood a voltage of 595 volts per millimeter of thickness."

The Firestone Tire and Rubber Co. (Akron, Ohio) report a volume of business for February and March this year in excess of that for the same period last year. They have issued an attractive booklet illustrated with cuts of 24 different standard motor runabouts equipped with their side wire tires. They have recently erected an additional building which is devoted to drying rubber.

The Progressive Rubber Co. (Mineral City, Ohio) are successors to the Excelsior Hard Rubber Co. One of their specialties is a new line of hard rubber ten pin balls, covered by letters patent.

The plant of the Aladdin Rubber Co. (Barberton, Ohio), reclaimers of rubber, destroyed by fire some time ago, has been rebuilt and is now in operation.

The D. E. Foote Rubber Co. (Cleveland, Ohio) are now handling the G. & J. tires. They have recently enlarged their tire repair department.

A certificate of the assignment of the Emergency Rubber Co. (Rochester, New York) to Albert Vogt was filed in the office of the county clerk at Rochester, on March 19. The company was incorporated October 4, 1905, to exploit a patented rubber shoe.

Review of the Crude Rubber Market.

PRICES during the month have fluctuated to an unusual extent, and the market closed materially higher. Buying has been active at Pará, which has sent prices up in all other centers. Whether this has been due to heavier requirements for Europe remains to be seen. There has been more inquiry for American account, and an increased volume of sales, in spite of the advance in prices, from which it would appear that stocks in manufacturers' hands are less extensive than at one time appeared probable.

Arrivals at Pará (including caucho) from July 1 last to March 18 amounted to 27,605 tons, compared with 29,390 tons to the end of March, 1907, and 28,020 tons for the same period of the preceding year.

Of the 361 tons offered at the Antwerp sale on March 27 about 320 tons found buyers at an advance over brokers' estimations of 2½ to 3 cents per pound. Only a small proportion was bought for American account.

Following are the quotations of New York for Pará grades one year ago, one month ago, and March 20—the current date:

PARÁ.	Apr. 1, '07.	Mar. 1, '08.	Mar. 30.
Islands, fine, new.....	116 @117	65@66	76@77
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	118 @119	67@68	77@78
Upriver, fine, old.....	121 @122	69@70	80@81
Islands, coarse, new.....	67 @ 68	41@42	41@42
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	92 @ 93	48@49	55@56
Upriver, coarse, old.....	none here	none here	none here
Caucho (Peruvian), sheet....	75½@ 76	43@44	45@46
Caucho (Peruvian), ball.....	86 @ 87	49@50	55@56
Ceylon (Plantation), fine sheet	137 @138	75@76	83@84

AFRICAN.

Sierra Leone, 1st quality	63@64	Lopori ball, prime	61@62
Massai, red	63@64	Lopori strip, prime	54@55
Benguella	45@46	Madagascar, pinky.....	61@62
Accra flake	12@13	Ikelemba	none here
Cameroon ball	45@46	Soudan niggers	53@54

CENTRALS.

Esmeralda, sausage	53@54	Mexican, scrap	52@53
Guayaquil, strip	42@43	Mexican slab	40@41
Nicaragua, scrap	52@53	Mangabeira, sheet	42@43
Panama	41@42	Guayule	25@26

EAST INDIAN.

Assam	62@63	Borneo	25@26
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Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	35600	Upriver, fine.....	45500
Islands, coarse	15700	Upriver, coarse	25800
		Exchange	15 7/32d.

Statistics of Para (Excluding Caucho)

	NEW YORK.					
	Fine and Medium.	Coarse.	Total.	Total.	Total.	
Stocks, January 31.....tons	83	27	110	128	224	
Arrivals, February	995	402	1397	2205	1652	
Aggregating	1078	429	1507	2333	1876	
Deliveries, February	959	396	1355	2137	1518	
Stocks, February 28.....	119	33	152	196	358	
	PARÁ.			ENGLAND.		
	1908.	1907.	1906.	1908.	1907.	1906.
Stocks, January 31.....tons	1245	965	1460	850	345	460
Arrivals, February	4250	4030	3150	1870	804	1365
Aggregating	5495	4995	4610	2720	1149	1825
Deliveries, February	4130	4510	3873	1355	700	950
Stocks, February 28....	1365	485	737	1365	449	875

	1908.	1907.	1906.
World's visible supply, February 28....tons	5,089	3,014	3,685
Pará receipts, July 1 to February 28.....	21,195	20,760	21,469
Pará receipts of caucho, same dates.....	3,295	2,650	2,845
Afloat from Pará to United States, Feb. 28	657	634	745
Afloat from Pará to Europe, February 28..	1,950	1,250	970

LONDON, March 6.—The rubber market during the week has been very steady and prices have gradually advanced 1d. @ 1½d. per pound, but sales have been small owing to want of sellers. About 23 tons Straits and 11½ tons Ceylon plantation were offered, and very generally sold. Crêpe brought as high as 3s. 4d. @ 3s. 5d. [= 83½ cents], and 5 cases very fine pale Warriapolla estate biscuits sold at 3s. 10d. [= 93¼ cents]. Lewis & Peat report: "A large business has been done privately in biscuits and sheets at 3s. 1d. @ 3s. 3d., and in good crêpe at 3s. 3d. @ 3s. 4d. per pound." To-day's prices of fine hard Pará is 3s. 2d. [= 77 cents per pound.]

A London report of March 13 says: "During the past week we have had a very strong market, resulting in a rise of about 6d. per pound, for fine. The sales amount to about 400 tons, and include fine hard at 3s. 1d. @ 3s. 7½d. for delivery, according to position."

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

FEBRUARY 26.—By the steamer <i>Benedict</i> , from Manáos and Pará:					
IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co.....	174,000	53,000	46,400	157,800	431,200
Poel & Arnold	211,200	56,700	51,400	78,200	397,500
General Rubber Co.	114,800	17,600	133,900	600	266,900
New York Commercial Co..	170,900	19,600	37,000	300	227,800
C. P. dos Santos	20,100	3,600	42,300	....	66,000
G. Amsinck & Co.....	37,500	2,500	1,800	....	41,800
Edmund Reeks & Co.....	1,500	300	11,200	....	13,000
William E. Peck & Co....	700	....	10,600	....	11,300
Hagemeyer & Brunn	2,900	....	4,000	....	6,900
Total	733,600	153,300	338,600	236,900	1,462,400
MARCH 4.—By the steamer <i>Medwense</i> , from Manáos and Pará:					
New York Commercial Co..	252,400	41,400	60,400	6,800	361,000
Poel & Arnold	110,700	70,400	97,500	....	278,600
C. P. dos Santos	19,600	6,100	33,700	2,000	61,400
Hagemeyer & Brunn	4,600	....	12,500	....	17,100
General Rubber Co.	132,300	30,200	90,700	1,200	254,400
G. Amsinck & Co.....	183,000	33,400	24,900	28,900	270,200
William E. Peck & Co....	700	....	11,200	....	11,900
A. T. Morse & Co.....	43,900	7,700	36,100	400	88,100
Edmund Reeks & Co.....	7,900	....	20,400	....	28,300
Robinson & Stiles	8,000	1,100	1,700	....	10,800
Total	763,100	150,300	389,100	39,300	1,381,800
MARCH 14.—By the steamer <i>Goyaz</i> , from Pará:					
G. Amsinck & Co.....	161,400	21,800	12,100	....	195,300
MARCH 14.—By the steamer <i>Cearense</i> , from Manáos and Pará:					
Poel & Arnold	176,600	31,300	146,400	33,700	388,000
L. Johnson & Co.....	19,900	4,900	14,000	4,900	43,700
General Rubber Co.	89,700	24,400	96,900	3,600	214,600
C. P. dos Santos	10,700	300	14,500	....	25,500
A. T. Morse & Co.....	....	....	23,500	....	23,500
New York Commercial Co..	4,500	7,000	12,200	1,900	25,600
Robinson & Stiles	9,900	600	2,000	....	12,500
William E. Peck & Co....	2,900	....	9,800	....	12,700
Total	314,300	68,500	319,600	44,100	746,400

Rubber Scrap Prices.

LATE New York quotations—prices paid by consumers for car-load lots, per pound—show a decline, as compared with last month:

Old rubber boots and shoes—domestic.....	5½@ 6
Old rubber boots and shoes—foreign.....	5 @ 5½
Pneumatic bicycle tires	6 @ 6½
Automobile tires	6 @ 6½
Solid rubber wagon and carriage tires	7 @ 8
White trimmed rubber	10½@11
Heavy black rubber.....	4¼@ 4½
Air brake hose.....	3¾@ 4
Garden hose	2 @ 2¼
Fire and large hose.....	2¾@ 3¼
Matting	1½@ 1¾

RUBBER FLUX

No. 17. Particularly adapted to softening material for tubing machine. Almost universally used for waterproofing wire.

No. 48. For fluxing pigments in compounding. A valuable adjunct to the manufacture of moulded goods as it does not blow under cure.

WRITE FOR PRICES.

Massachusetts Chemical Co.
WALPOLE, MASS.

Operates Walpole Rubber Works; Walpole Varnish Works.



We Are Offering
Scrap Rubber



AT

Low Prices



Theodore Hofeller & Co.
BUFFALO, N. Y.



We solicit your inquiries.

Liverpool.

WILLIAM WRIGHT & Co. report [March 2]:

Fine Pará.—Heavy receipts at Pará caused some forced selling, and about the middle of the month prices dropped 4d. per pound, but have since recovered somewhat. A large forward business was done at the decline, and the market closes at about steady values: Upriver fine 2s. 11¼d., Islands 3s. After this month we may expect a decline in receipts, which ought to have a steadying effect on prices. American demand for the near position is dull, but there is some sign of improvement for distant delivery.

EDMUND SCHLUTER & Co. report [February 28]:

In forming an opinion on the future course of prices it is well to bear in mind (1) that contrary to last year the March receipts are expected to be only moderate; (2) that the apparently very large visible supplies are not unwieldy at the present value of rubber, and last, but not least, that a large section of American consumers, possibly also a number of large consumers in Europe, have no reserves to fall back on. It is moreover quite possible that the unprecedented fall in prices may adversely affect the volume of the 1908-09 crop from July to June. When we last had a visible supply approaching the present one (i. e., in 1902) the end of the year saw prices 9d. over the quotations of February 28, and it may well be that history repeats itself. For the meantime trade all the world over is still very quiet, and the recovery of the market may not come about so quickly as patient holders of rubber would like, and any attempt at forcing the pace would undoubtedly be followed by a relapse.

THE WORLD'S VISIBLE SUPPLY OF PARA, FEBRUARY 28.

	1908.	1907.	1906.	1905.	1904.	1903.
Tons	7113	4160	5047	3692	3599	4701
Prices, hard fine...	2/11	5/1¼	5/4¼	5/5	4/6	3/9

LIVERPOOL STOCKS OF AFRICAN RUBBER, FEBRUARY 28.

1908.....	350	1905.....	338	1902.....	536
1907.....	301	1904.....	346	1901.....	779
1906.....	298	1903.....	355	1900.....	595

Bordeaux

ARRIVALS at this market in 1907 were less than for the preceding year by just 200 tons. The major share, as usual, was from French West Africa. The falling off was mainly in Conakry niggers (75 tons), Gambia (31 tons), Soudan twists (35 tons), Madagascar (50 tons), Dutch East Indies (48 tons). There was an increase in Soudan niggers, Central American sorts, and "manicoba" (Ceará rubber).

The stock in the Bordeaux market at the end of 1907 was 135,673 kilograms.

GUAYULE

WHEN PROPERLY CURED AND MIXED WITH OTHER COMPOUNDS
IS THE CHEAPEST RUBBER ON THE MARKET

**There is As Much Difference Between the Various Brands of Guayule
as Between Fine Para and Shoddy**

Guayule made from old, sun exposed shrub is **dead, dirty and sticky**, and no amount of washing will make it clean, while rubber made from freshly cut, selected shrub, has **life**, low percentage of resin and is practically clean.



has been on the market for several years and is known to be the best Guayule made as to life, strength, purity and low percentage of resin.

There is a large demand for a specially prepared Guayule, dry and ready for use, which we have met in



As this rubber is made exclusively from our high grade "Parra" Guayule, uniformity and absolute purity is guaranteed. No mixing in of cheap compounds to bring down the price. Durango rubber is nothing but Parra brand pure Guayule prepared so that anybody can use it.

**CONTRACTS MADE FOR REGULAR MONTHLY
OR WEEKLY DELIVERIES**

For Samples and Quotations apply to

ED. MAURER

97 Water St., NEW YORK

**Sole Representative of the MADERO interests in Mexico,
largest owners of Guayule**

PARA RUBBER VIA EUROPE.

	POUNDS.
FEB. 21.—By the <i>Pretoria</i> =Hamburg:	
W. L. Gough & Co. (Fine).....	6,600
FEB. 24.—By the <i>Campania</i> =Liverpool:	
New York Commercial Co. (Coarse)....	19,000
FEB. 28.—By the <i>Mauretania</i> =Liverpool:	
New York Commercial Co. (Fine).....	11,500
Robinson & Stiles (Coarse).....	2,500
MARCH 4.—By the <i>Siberia</i> =Mollendo:	
W. R. Grace & Co. (Cauchó) ..	18,000
MARCH 7.—By the <i>Lucania</i> =Liverpool:	
New York Commercial Co. (Fine).....	5,500
MARCH 23.—By the <i>Etruria</i> =Liverpool:	
New York Commercial Co. (Fine).....	11,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

	POUNDS.
FEB. 21.—By the <i>Venetia</i> =Colombia:	
Schulte & Goschen	2,000
Therin & Lartagen	1,500
J. A. Pauli & Co.	500
FEB. 21.—By the <i>Terence</i> =Bahia:	
J. H. Rossbach Bros.	9,000
A. Hirsch & Co.	1,000
FEB. 24.—By the <i>Allianca</i> =Colon:	
G. Amsinck & Co.	2,000
K. S. Nacila	1,000
W. R. Grace & Co.	500
FEB. 24.—By the <i>Merida</i> =Frontera:	
Harburger & Stack	5,000
Strube & Utzse	2,500
E. Steiger & Co.	3,500
H. Marquardt & Co.	1,000
E. N. Tibbals & Co.	500
FEB. 24.—By the <i>El Sud</i> =Galveston:	
Continental Mexican Co.	*55,000
FEB. 27.—By the <i>Creole</i> =New Orleans:	
Eggers & Heinlein	1,000
Schulte & Goschen	1,000
FEB. 29.—By the <i>Esperanza</i> =Tuxpam:	
H. Marquardt & Co.	2,500
MARCH 2.—By the <i>Finance</i> =Colon:	
Hirzel, Feltman & Co.	3,500
G. Amsinck & Co.	3,000
Isaac Brandon & Bro.	3,500
Piza Nephews & Co.	2,000
A. Rosenthal & Sons	500
R. G. Barthold	500
MARCH 2.—By the <i>Vigilancia</i> =Tampico:	
Edward Maurer	*155,000
Continental Mexican Co.	*110,000
Remsche & Helde	*110,000
H. Marquardt & Co.	*15,000
MARCH 3.—By the <i>Carib II.</i> =Truxillo:	
Eggers & Heinlein	3,000
MARCH 4.—By the <i>Siberia</i> =Colombian ports:	
A. Rosenthal & Sons	17,500
G. Amsinck & Co.	13,500
L. Delius & Co.	3,500
Therin & Lartagen	2,000
West Coast Rubber Co.	2,500
Bartling & De Leon	1,500
W. R. Grace & Co.	1,000
MARCH 5.—By the <i>Antilla</i> =Tampico:	
Edward Maurer	*55,000
H. Marquardt & Co.	*15,000
MARCH 5.—By the <i>Colon</i> =Colon:	
G. Amsinck & Co.	11,500
Jose Julia & Co.	3,500
Andreas & Co.	2,500
A. Santos & Co.	4,000
Roldau & Van Sickle	2,500
Demarest Bros.	1,500
Hirzel, Feltman & Co.	1,000
W. Loeza & Co.	1,500
Aramuburo, Incorporated	1,000
Wessels, Kulenkampff & Co.	500
Pablo, Calvet & Co.	1,000
MARCH 5.—By the <i>Antilles</i> =New Orleans:	
Ari Rotholz	5,000
Eggers & Heinlein	2,000
MARCH 7.—By the <i>El Valle</i> =Galveston:	
Continental-Mexican Co.	*55,000
MARCH 7.—By the <i>Mexico</i> =Frontera:	
Harburger & Stack	5,500
E. Steiger & Co.	500
MARCH 11.—By the <i>Joachim</i> =Colombia:	
Schulte & Goschen	11,000
De Lima & Cortessa	3,000
Suzarte & Whitney	2,000
A. Rosenthal & Sons	1,500
MARCH 12.—By the <i>El Norte</i> =Galveston:	
Edward Maurer	*26,000
MARCH 11.—By the <i>Voltaire</i> =Bahia:	
Poel & Arnold	11,000
MARCH 12.—By the <i>Momus</i> =New Orleans:	
G. Amsinck & Co.	1,500
MARCH 14.—By the <i>Monterey</i> =Frontera:	
E. Steiger & Co.	7,500
Harburger & Stack	5,000
H. Marquardt & Co.	1,500
MARCH 16.—By the <i>Panama</i> =Colon:	
G. Amsinck & Co.	6,500
W. R. Grace & Co.	2,500
MARCH 16.—By the <i>Svedish Prince</i> =Bahia:	
A. Hirsch & Co.	9,000
L. Johnson & Co.	10,000
MARCH 17.—By the <i>Hugin</i> =Tampico:	
New York Commercial Co.	*110,000

Edward Maurer	*80,000
Continental Mexican Co.	*25,000
H. Marquardt & Co.	*3,500
MARCH 18.—By the <i>Prins Frederik</i> =Savanna:	
G. Amsinck & Co.	5,000
Schulte & Goschen	3,500
Maitland, Coppel & Co.	500
A. Held	500
Chas. E. Griffin	500
MARCH 19.—By the <i>Creole</i> =New Orleans:	
Manhattan Rubber Mfg. Co.	1,000
Eggers & Heinlein	500
MARCH 19.—By the <i>Tagus</i> =Colombian ports:	
G. Amsinck & Co.	7,000
D. A. De Lima & Co.	1,500
J. M. La Paga	2,000
MARCH 20.—By the <i>Merida</i> =Frontera:	
Harburger & Stack	2,500
Strube & Utzse	2,000
MARCH 20.—By the <i>El Dia</i> =Galveston:	
Continental Mexican Co.	*55,000
MARCH 23.—By the <i>Allianca</i> =Colon:	
L. Johnson & Co.	4,500
G. Amsinck & Co.	4,000
Colombian Trading Co.	3,000
Hirzel, Feltman & Co.	3,000
Roldau & Van Sickle	2,500
Langman & Kemp	2,000
D. A. De Lima & Co.	2,000
Isaac Brandon & Bro.	1,000
Meyer Hecht	500
MARCH 23.—By the <i>Tennison</i> =Bahia:	
Poel & Arnold	18,000
MARCH 24.—By the <i>El Mar</i> =Galveston:	
National Rubber Co.	*110,000

* This sign, in connection with imports of centrals, denotes Guayule rubber.

AFRICAN.

	POUNDS.
FEB. 21.—By the <i>Pretoria</i> =Hamburg:	
General Rubber Co.	11,500
W. L. Gough & Co.	7,500
George A. Alden & Co.	4,500
Livesey & Co.	3,000
FEB. 24.—By the <i>Campania</i> =Liverpool:	
General Rubber Co.	70,000
George A. Alden & Co.	14,500
Livesey & Co.	7,000
FEB. 25.—By the <i>Zeeland</i> =Antwerp:	
A. T. Morse & Co.	30,000
General Rubber Co.	13,500
FEB. 26.—By the <i>Venezia</i> =Marseilles:	
Rubber Trading Co.	5,500
FEB. 27.—By the <i>Majestic</i> =Bordeaux:	
George A. Alden & Co.	11,500
FEB. 28.—By the <i>Georgic</i> =Liverpool:	
General Rubber Co.	45,000
FEB. 28.—By the <i>Mauretania</i> =Liverpool:	
George A. Alden & Co.	11,500
FEB. 29.—By the <i>Amerika</i> =Hamburg:	
A. T. Morse & Co.	7,000
Rubber Trading Co.	5,000
FEB. 29.—By the <i>Celtic</i> =Liverpool:	
George A. Alden & Co.	13,000
Livesey & Co.	11,000
Joseph Cantor	5,500
Poel & Arnold	3,500
MARCH 7.—By the <i>Lucania</i> =Liverpool:	
A. T. Morse & Co.	22,500
Robinson & Stiles	3,500
MARCH 11.—By the <i>Finland</i> =Antwerp:	
Joseph Cantor	11,000
Rubber Trading Co.	2,500
MARCH 13.—By the <i>Lusitania</i> =Liverpool:	
General Rubber Co.	7,000
MARCH 13.—By the <i>Lusitania</i> =Liverpool:	
George A. Alden & Co.	4,500
MARCH 16.—By the <i>Waldersce</i> =Hamburg:	
A. T. Morse & Co.	20,000
W. L. Gough & Co.	4,500
MARCH 16.—By the <i>Bretagne</i> =Havre:	
George A. Alden & Co.	15,000
MARCH 18.—By the <i>Vaderland</i> =Antwerp:	
Poel & Arnold	155,000
A. T. Morse & Co.	50,000
General Rubber Co.	14,000
Robinson & Stiles	11,500
George A. Alden & Co.	6,500
Joseph Cantor	6,500
MARCH 20.—By the <i>Cevic</i> =Liverpool:	
General Rubber Co.	45,000
Livesey & Co.	18,000
Poel & Arnold	9,000
MARCH 21.—By the <i>Pennsylvania</i> =Hamburg:	
General Rubber Co.	45,000
George A. Alden & Co.	11,500
MARCH 23.—By the <i>St. Laurent</i> =Havre:	
A. T. Morse & Co.	28,000
MARCH 23.—By the <i>Etruria</i> =Liverpool:	
General Rubber Co.	22,500
George A. Alden & Co.	22,500
MARCH 23.—By the <i>Touraine</i> =Havre:	
A. T. Morse & Co.	22,500
MARCH 24.—By the <i>Zeeland</i> =Antwerp:	
Poel & Arnold	28,000
A. T. Morse & Co.	22,500

EAST INDIAN.

	POUNDS.
FEB. 24.—By the <i>Minnetonka</i> =London:	
General Rubber Co.	*4,500
George A. Alden & Co.	*2,500
Robinson & Stiles	8,000
MARCH 5.—By the <i>Schuykill</i> =Singapore:	
W. L. Gough & Co.	16,000
Poel & Arnold	10,000
Heabler & Co.	8,000
MARCH 6.—By the <i>Neuenfels</i> =Colombo:	
A. T. Morse & Co.	*18,500
MARCH 13.—By the <i>Kabinga</i> =Colombo:	
A. T. Morse & Co.	*22,500
MARCH 16.—By the <i>New York</i> =London:	
Canadian Rubber Co.	*2,500

* Denotes plantation rubber.

GUTTA-JELUTONG.

	POUNDS.
MARCH 5.—By the <i>Schuykill</i> =Singapore:	
Heabler & Co.	110,000
J. W. Phyfe & Co.	60,000
W. L. Gough & Co.	55,000
Joseph Cantor	35,000
H. Pauli & Co.	20,000

GUTTA-PERCHA.

	POUNDS.
FEB. 21.—By the <i>Pretoria</i> =Hamburg:	
Robert Soltan Co.	7,000
FEB. 29.—By the <i>Amerika</i> =Hamburg:	
Robert Soltan Co.	7,000
MARCH 5.—By the <i>Schuykill</i> =Singapore:	
Poel & Arnold	4,000

BALATA.

	POUNDS.
FEB. 21.—By the <i>Prins Maurits</i> =La Guayra:	
C. P. Shilstone	3,500
FEB. 29.—By the <i>La Savoie</i> =Havre:	
W. L. Gough Co.	4,500
MARCH 9.—By the <i>Nederlander</i> =Cunana:	
Kunhardt & Co.	2,500
Frame & Co.	2,000
G. Amsinck & Co.	1,500
Middleton & Co.	1,000
MARCH 19.—By the <i>Korona</i> =Demerara:	
George A. Alden & Co.	7,000
MARCH 20.—By the <i>Adriatic</i> =London:	
W. L. Gough Co.	2,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—FEBRUARY.

Imports:	POUNDS.	VALUE.
India-rubber	5,652,286	\$3,017,382
Balata	7,689	2,838
Gutta-percha	20,378	9,680
Gutta-jelutong	1,287,933	77,275

Total

Exports:

India-rubber

Reclaimed rubber

Rubber scrap imported

BOSTON ARRIVALS.

	POUNDS.
JAN. 1.—By the <i>Janeta</i> =Hamburg:	
Poel & Arnold, Africans	5,000
JAN. 3.—By the <i>Michigan</i> =Liverpool:	
George A. Alden & Co., Africans ..	13,500
Rubber Trading Co., Africans	7,500
JAN. 11.—By the <i>Bethania</i> =Hamburg:	
W. L. Gough Co., Africans	5,500
JAN. 13.—By the <i>Sachem</i> =Liverpool:	
Poel & Arnold, Africans	2,500
JAN. 29.—By the <i>Winifreda</i> =Liverpool:	
George A. Alden & Co., Africans ..	6,200
Total	40,200

FEB. 7.—By the <i>Lancastrian</i> =London:	
George A. Alden & Co., Africans	15,500
FEB. 17.—By the <i>Anglian</i> =London:	
George A. Alden & Co., Africans	8,000
FEB. 24.—By the <i>Arcadia</i> =Hamburg:	
W. L. Gough Co., Africans	13,500
FEB. 27.—By the <i>Saronia</i> =Liverpool:	
W. L. Gough Co., Africans	6,200
Total	43,200

GUTTA-JELUTONG.

	POUNDS.
FEB. 7.—By the <i>Lancastrian</i> =London:	
W. L. Gough Co.	55,000
FEB. 18.—By the <i>Montrose</i> =Singapore:	
George A. Alden & Co.	455,000
FEB. 25.—By the <i>Schuykill</i> =Singapore:	
Behn, Meyer & Co.	225,000
Total	735,000



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BRAZIL'S EXPORT OF RUBBER.

THE figures herewith indicate the weight in kilograms of the exports of rubber from all the ports of Brazil, of rubber produced in that republic, during the past five calendar years. They have been compiled from the returns of the federal bureau of statistics of Brazil, and are in continuation of a similar table presented in THE INDIA RUBBER WORLD July 1, 1907 (page 304). We have had occasion before to refer to the high degree of efficiency to which the statistical office referred to has been developed under the administration of Mr. J. P. Wileman, and the figures herewith may be regarded as representing very closely the totals of the rubber manifests from the different ports. Some of the statistics here included are not available elsewhere

It will be observed that these figures relate to shipments by calendar years, whereas the Pará and Manáos figures, presented periodically in this paper, relate to "crop years." Besides, the latter include the output from the whole Amazon region, whereas the figures on this page report the Brazilian output alone. This, as will be seen, still shows a tendency to increase. What will be the effect, however, of the recent decline in prices upon the current year's production remains to be seen.

PARA RUBBER (INCLUDING CAUCHO).

PORTS.	1903.	1904.	1905.	1906.	1907.
Manáos	16,499,519	15,331,869	15,246,938	14,732,000	16,767,834
Pará	12,559,057	13,171,212	16,221,766	16,554,000	16,017,611
Corumbá	255,168	251,396	441,787	217,000	392,594
Itacoatiara .....	.....	2,175	6,091	.....	117,294
Maranhão	199	13,410	82,646	.....	12,993
Ilha do Cajueiro	1,972	18,344	17,296	140,000	74,355
Porto Murtinho	2,740	3,800	2,761	.....	.....
Total	29,318,655	28,792,206	32,073,285	31,643,000	33,382,681

CEARA RUBBER ("MANICOBÁ").

PORTS.	1903.	1904.	1905.	1906.	1907.
Ceará	517,824	668,809	589,218	715,000	588,854
Bahia	496,224	939,157	1,443,826	1,410,000	1,285,103
Ilha do Cajueiro	632,858	503,871	557,530	505,000	520,824
Pará	950	2,430	350	.....	.....
Maranhão	27,398	11,471	.....	.....	1,710
Cabedello .....	.....	1,923	8,527	.....	9,812
Pernambuco	41,333	97,556	82,666	34,000	16,875
Maceió .....	.....	180	.....	.....	.....
Rio de Janeiro.....	5,397	680	100	.....	.....
Natal .....	.....	.....	.....	.....	5,500
Total	1,721,894	2,226,077	2,682,217	2,664,000	2,428,678

MANGABEIRA RUBBER.

PORTS.	1903.	1904.	1905.	1906.	1907.
Bahia	355,291	415,379	261,189	262,985	264,811
Rio de Janeiro.....	43,457	85,195	105,413	129,044	75,586
Santos	62,588	128,991	95,190	88,535	100,931
Corumbá	37,893	56,381	74,733	81,722	75,800
Pará	1,896	541	2,805	.....	.....
Maranhão	3,214	6,301	3,197	.....	6,465
Ilha do Cajueiro	28,100	35,316	29,733	.....	39,896
Ceará	3,996	6,935	19,019	.....	4,777
Cabedello	15,354	22,861	11,742	.....	15,003
Pernambuco	97,849	85,034	30,314	90,953	72,795
Maceió	11,543	10,420	3,294	.....	7,681
Porto Alegre .....	.....	350	.....	.....	.....
Porto Murtinho	400	1,300	480	.....	815
Natal .....	.....	.....	.....	.....	13,663
Paranaguá .....	.....	.....	.....	.....	15
Total	661,581	855,208	637,109	653,239	678,238

GRAND TOTAL. 31,702,130 31,873,491 35,392,611 34,960,239 36,489,597

BRAZILIAN RUBBER EXPORTS, BY PORTS.

	1903.	1904.	1905.	1906.	1907.
a Amazon ports.....	29,061,422	28,508,227	31,477,950	31,296,000	32,902,738
b Atlantic ports.....	2,344,507	3,042,385	3,394,900	3,361,517	3,117,650
c Interior ports.....	296,201	312,879	519,761	302,722	469,209
Total	31,702,130	31,863,491	35,392,611	34,960,239	36,489,597

a Para, Manáos, and Itacoatiara.
 b On the Brazilian coast, from Cabedello south to Santos.
 c Corumbá and Porto Murtinho, on the river Paraguay, discharging into the Rio de la Platte, and representing the shipments figuring as exports to Uruguay and Argentina.

DESTINATION OF EXPORTS, 1907.

COUNTRIES.	Pará.	Manicoba.	Mangabeira.	Total.
United States.....	16,115,669	501,976	193,606	16,811,251
Great Britain	12,623,834	1,514,594	215,031	14,353,459
Germany	1,955,516	192,021	183,711	2,331,248
France	2,285,047	215,739	5,575	2,506,361
Belgium	10,021	3,686	4,109	17,816
Uruguay	381,403	.....	76,406	457,809
Argentina	11,191	.....	.....	11,191
Denmark .....	.....	662	.....	662
Total	33,382,681	2,428,678	678,238	36,489,597

[NOTE.—The above figures do not embrace small shipments of "massaranduba" gum from Pará, amounting in 1907 to 175 pounds, which went to Great Britain.]

ARTHUR DU CROS, some time ago elected member of parliament for Hastings, was a defendant recently in an action brought in a London court by a writer who claims 300 guineas [= \$1533], alleged to be due for services in preparing political speeches for Mr. Du Cros during a former campaign, in which the candidate was unsuccessful. Mr. Du Cros is a member of the family identified so prominently with the Dunlop tire company, and at one time assisted the plaintiff in this action, Frank Harris, to establish an automobile paper. He disputes, however, the value placed upon the work done by the latter in his political campaign.

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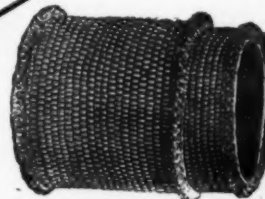
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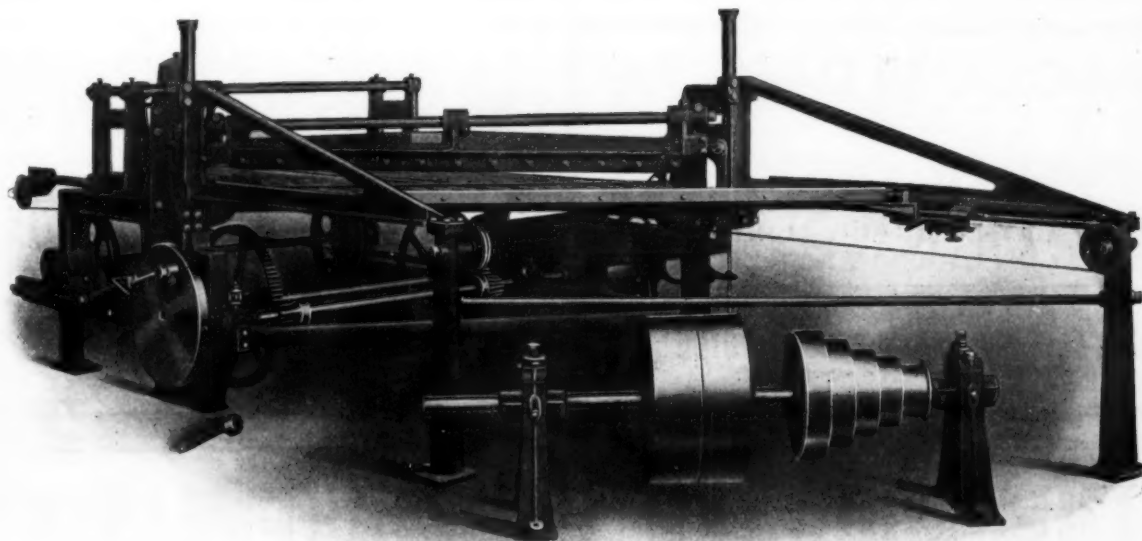
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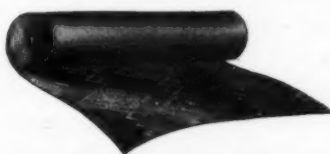
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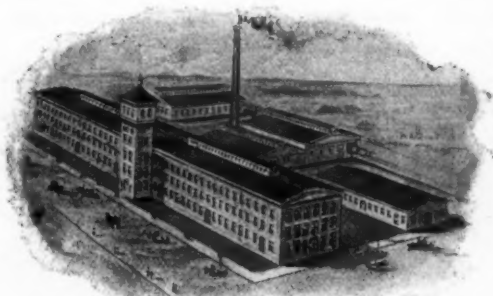
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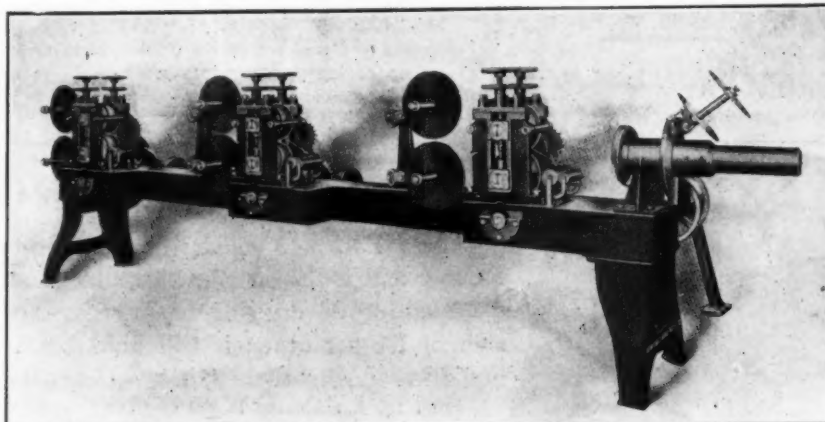
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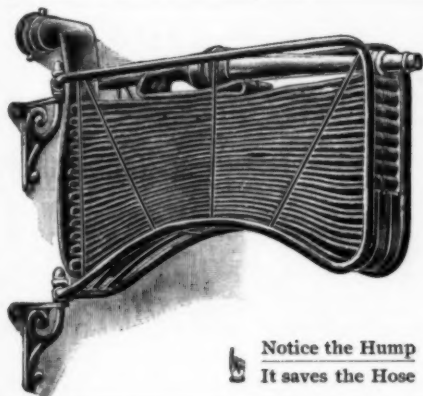
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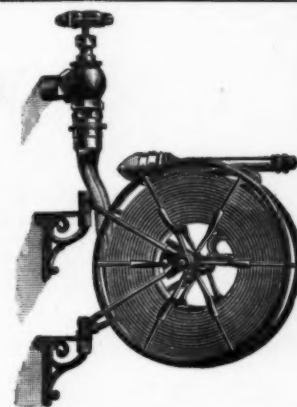
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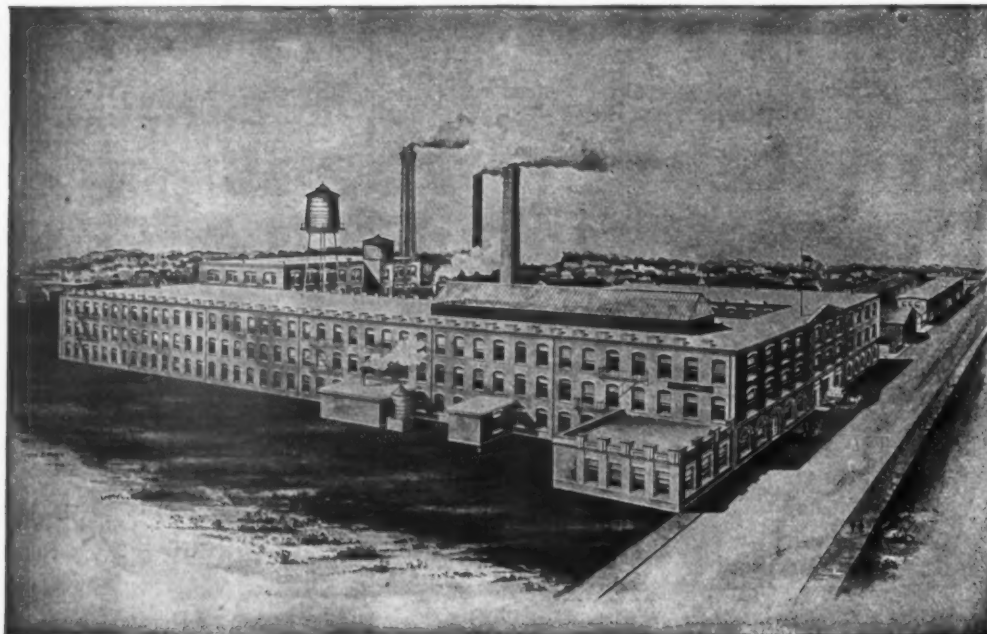
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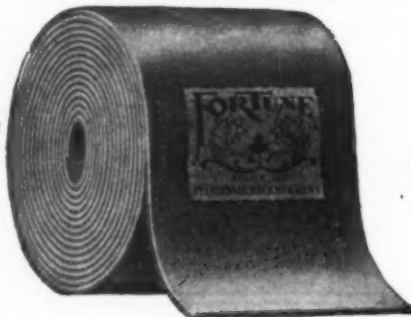
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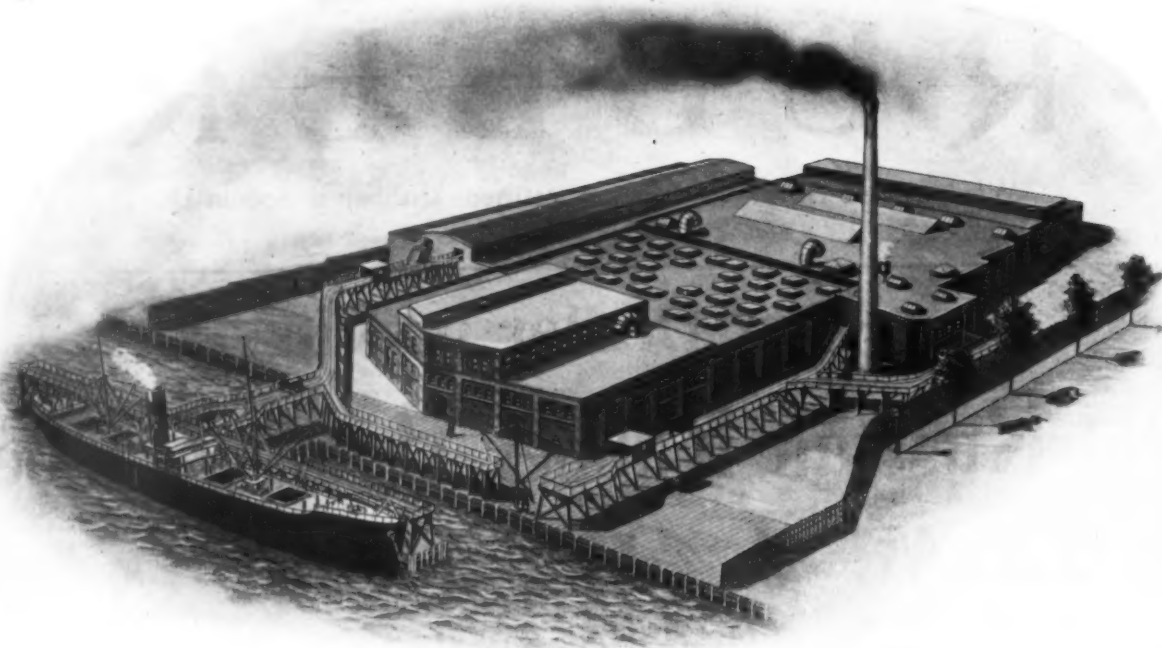
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Indiana and Wabash Single Tube Bicycle Tires

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ARE THE WORLD'S STANDARD VALVES.

For automatically reducing and absolutely
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We are Experts in This Line. Let Us Prove It to You.

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We Are Well Equipped for the Manufacture of Light Machinery.

We Carry in Stock a Full Line of Brass Swivel Couplings.

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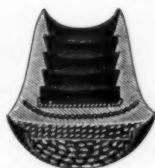
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ARE MADE OF BEST RUBBER. Don't Slip. Outwear All Others.



Foster, Catpaw and Tredair Heels are the only Heels made under FOSTER PATENTS and in common with the

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Cannot Be Made by Other Concerns

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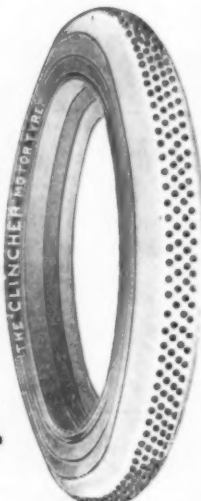
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Grooved Non-
Slipping Tread

Steel Studded Non-Skid Tread

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Castle Mills,
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Specialty.We can furnish a valve
to meet any conditions.Best quality Valve
Discs, standard and
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Ammonia Rings.

Send for our New Valve Circular. It will interest you.

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Base, Metallic Aluminum 48%
Gravity 2.58

It toughens Rubber, gives it life and lightens gravity

ABSOLUTELY INERT**THE ALUMINUM FLAKE COMPANY, AKRON, O.**

A distinct substitute for zinc in part or whole, in all lines of Rubber Manufacture.

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WHITE and BLACK**Rubber Substitutes****As a Filler**
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The lightest Rubber Drug known.

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for vulcanising and preserving Rubber.

SUBSTITUTES, free from Acid
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SULPHUR SPECIALLY PREPARED FOR THE RUBBER TRADE.
One of our largest customers report that it gives on analysis, Mineral Matter .000%, reaction neutral; Arsenic absent, and in our opinion is an exceptionally good sulphur and free from acid. **CORRESPONDENCE INVITED.**

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Manufacturers of

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Especially adapted to the use of
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Small Advertisement Department.

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WANTED.—Position of responsibility in the manufacture of rubber goods. Have had years of experience in charge of many of its various lines, and am thoroughly versed in construction of plant, installation of machinery and manipulation of same. Best of reasons for desiring a change. Address V. V., care of THE INDIA RUBBER WORLD. (1066)

POSITION wanted by a first-class calender man, familiar with tire, stamp and shield compounds. Also a good general compounder. Address W. W., care of THE INDIA RUBBER WORLD. (1067)

CHEMIST. with long experience in rubber manufacture, familiar with experimental work, both in the laboratory and in the factory, and with the analysis of rubber goods and of mixing ingredients, desires an opening where there is a chance for active, progressive work. Best of references. Address A. J. B., care of THE INDIA RUBBER WORLD. (1076)

SITUATIONS OPEN

WANTED.—General Superintendent for strictly mechanical goods factory—must be up-to-date, thoroughly business and even though he may have his own pet compounds, can and will use those he finds here and which we know are correct for our business. No experimenter need apply. We want a hard headed, common sense man. The company runs the business. The Superintendent is to manufacture the goods as we direct, not as he pleases. Ability to handle men required. All replies confidential. Good money. Address X X RUBBER CO., care of THE INDIA RUBBER WORLD. (1062)

WANTED.—Competent, well-informed salesman to sell our rubber band output. We are about to manufacture rubber bands in a large way and will be in position to compete both as to price and quality. THE DIAMOND RUBBER CO., Akron, Ohio. (1063)

WANTED.—Competent Superintendent for rubber factory making a general line of Mechanical Rubber Goods. Address T. T., care of THE INDIA RUBBER WORLD. (1064)

WANTED.—A Foreman for a small hard rubber plant, one who understands formulas for making hard rubber compounds. Must be sober, reliable and furnish references and experience in the hard rubber line. State salary wanted. Address Y. Y., care of THE INDIA RUBBER WORLD. (1075)

A live successful concern in general rubber goods has an opening for an active man with experience as Manager of Sales. If capable, an interest in the business can be secured. All communications confidential. Address N. H., care of The India Rubber World.

FOR SALE OR RENT

FOR SALE OR RENT ON EASY TERMS.—A large new Rubber Mill, situated at Catsaupa, on the outskirts of Allentown, Pa. By railroad, within four hours from Pittsburg, two hours from New York City, two hours from Philadelphia, and three from Scranton, Pa. The Factory is a large brick, steel and cement building, 60' x 120'. Boiler room, 34' x 66'. Vulcanizing room, 18' x 75'. Chemical room, 16' x 16'. The Factory cost \$57,000. The Machinery is all new and has never been used. The Machinery was made by a first-class Rubber Mill Machinery Manufacturer in the East, consisting of one 15 x 24 Dry Sand Roll Washer, both rolls cut, one 16 x 24 Chilled Cracker, one roll cut; four 16 x 40 Mills; one 18 x 42 Stock and Friction Calender, double speed drive; twenty 22 x 22 Screw Presses, 3 plates; two 40 x 42 Hydraulic Presses, 15" ram; one 8" x 14" x 12" Steam Pump; Two Vulcanizers 60" in diam, by 16 ft. long; one 30" Spreader with doubling arrangement that has never been taken out of the cases it was shipped in from the foundry; hydraulic pumps; two 208 horse power B. & W. Water Tube Boilers; one 30 x 40 Buckeye Engine; tanks and other apparatus; artesian well; one 16 x 12 Dean Pump; tool equipment; two smelters. Concrete floor all through the building. This plant is one of the most up-to-date plants in the country to-day. N. J. Central railroad siding. It comprises about three acres of land. It must be sold or leased immediately, as the party owning it is not in the manufacturing business. For all further information apply to PHILIP McGARRY, Trenton, N. J.

FOR SALE.—Twenty Mixers and Grinders, four Crackers and Washers, all large sizes with heavy strong frames. One Friction Calender, Devulcanizers, Presses and a large lot of other Rubber Mill Machinery, all complete and in first class condition. PHILIP McGARRY, TRENTON, N. J.

FOR SALE.—One new 48" x 10' vulcanizer, with hinged door, swing bolts, track and carriage. Also several vulcanizers which have been used. Also one chilled roll grinder, 15" x 36", thoroughly overhauled. For further particulars address LIBERTY, care of THE INDIA RUBBER WORLD. (1056)

RUBBER MILL MACHINERY FOR SALE.—One 3 roll Combination Calender rolls 22 x 64; 20 x 40 Mills or Grinders; 15 x 36 Mills or Grinders; five Hydraulic Presses, Accumulator Pump, etc.; Washers, Embossing Calenders, Vulcanizers, etc. Above machinery in the best of condition. M. NORTON & CO., CHARLESTOWN, MASS.

FOR SALE.—Factory Rubber Waste from Rubber Cement; cleaned at a low price; sample sent free. UNITED STATES WASTE RUBBER CO., No. 487 North Warren Avenue, Brockton, Mass.

PROPOSALS

PROPOSALS FOR INDIAN SUPPLIES.—Department of the Interior, Office of Indian Affairs, Washington, D. C., March 16, 1908. Sealed proposals, plainly marked on the outside of the envelope: "Proposal for rubber goods, shoes," etc., as the case may be, and addressed to the "Commissioner of Indian Affairs, Washington, D. C.," will be received at the Indian Office until 2 o'clock p. m. of Tuesday, May 5, 1908, and then opened, for furnishing the Indian service with rubber goods, shoes, hardware, and medical supplies. Sealed proposals, plainly marked on the outside of the envelope: "Proposal for enamelled ware, furniture," etc., as the case may be, and addressed to the "Commissioner of Indian Affairs, Washington, D. C.," will be received at the Indian Office until 2 o'clock p. m. of Thursday, May 7, 1908, and then opened, for furnishing the Indian service with enamelled ware, lamps, furniture, bedding, stoves, agricultural implements, paints, oils, glass, tinware, wagons, harness, leather, shoe findings, saddlery, etc., school supplies, and a long list of miscellaneous articles. Bids must be made out on Government blanks. Schedules giving all necessary information for bidders will be furnished on application to the Indian Office, Washington, D. C.; the U. S. Indian Warehouses at New York City; Chicago, Ill.; St. Louis, Mo., and Omaha, Neb. The Department reserves the right to reject any and all bids, or any part of any bid. F. E. LEUPP, Commissioner.

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Manufacturers of
MECHANICAL RUBBER GOODS, BUMPERS, SPRINGS, BABY CAR
TIRES, TRUCK TIRES, PACKING, TUBING, SPRINGFIELD
ABRASIVE POLISHING WHEELS AND BLOCKS, BATH
BRUSHES, RUBBER HEELS, ETC.
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FORMULAS.—For a reasonable consideration I will reveal to responsible business house or manufacturer an indexed collection of 250 desirable secret formulas or compounds for making large and varied line of mechanical rubber goods, rare colored sheet packings, special valves and other money makers, showing cured and names of chemicals from which costs may be reduced. Address PHOENIX, care of THE INDIA RUBBER WORLD. (1068)

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FOR SALE.—Complete equipment to manufacture small mechanical rubber goods. 8" x 10" Washer, 8" x 18" Mixer (Belted), 21" x 24" Boomer and Boschert Press, 14" x 19" Screw Press, No. 2 Clark Tubing Machine, one 5 H. P. Steel Boiler and Engine for high pressure, some shafting pulleys, etc. Sold singly or as one lot at the right price for quick sale. Address X, 2932 Washington street, Boston, Mass. (1061)

TUBING MACHINE OPERATOR WANTED.—Must be capable of running, adjusting and taking charge of machine. Address Z. Z., care of THE INDIA RUBBER WORLD. (1072)

WANTED.—An experienced salesman to sell mechanical rubber goods in the East. Also one in the Middle West and one in the West. Address W. R., care of THE INDIA RUBBER WORLD. (1073)

WANTED to purchase, lease or acquire, a rubber plantation in Mexico or Central America. All communications confidential. Address G., care of THE INDIA RUBBER WORLD. (1074)

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Always contains same constant percentage
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A Zinc Product More Effective than Zinc Oxide

Excels in

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Reclaimed
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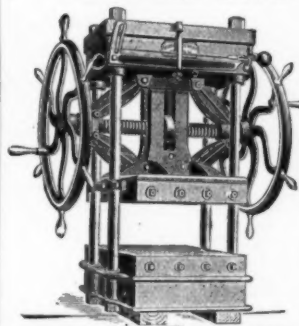
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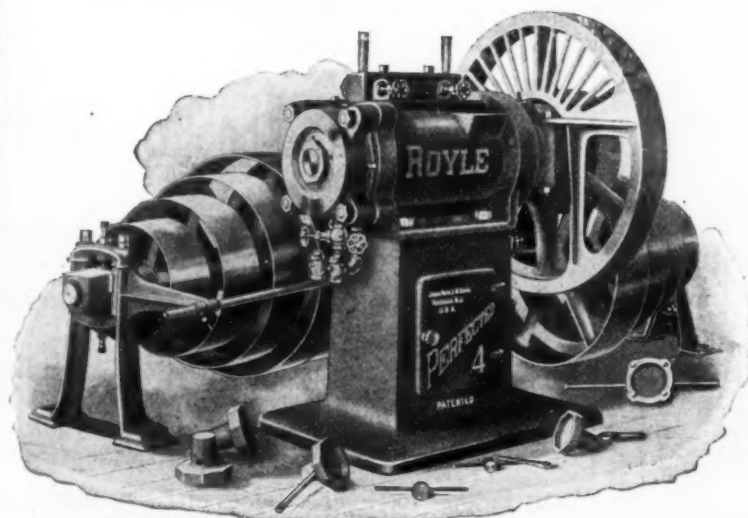
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Tubing and Insulating Machines. Circular Loom.



Acid Proof, Alkaline Proof, Electrolysis Proof.

NO PITCH
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A pure natural Hydro-Carbon, elastic, resilient product, is being used extensively in Hose packings, moulded goods, carriage drills, wire covering, Hard Rubber, and various other purposes.

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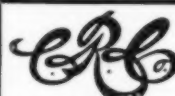


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Manufacturers of
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Best facilities for
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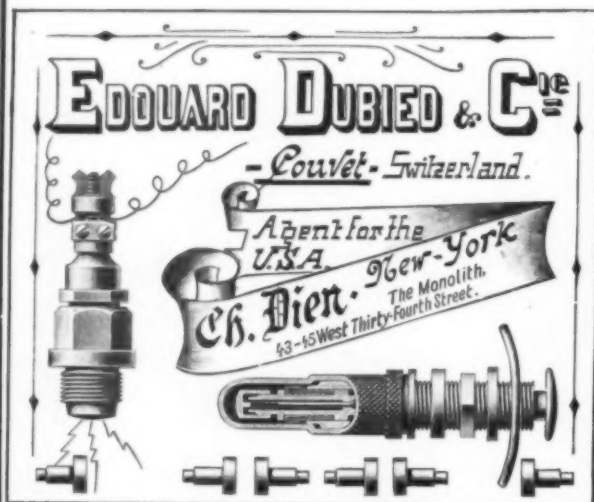
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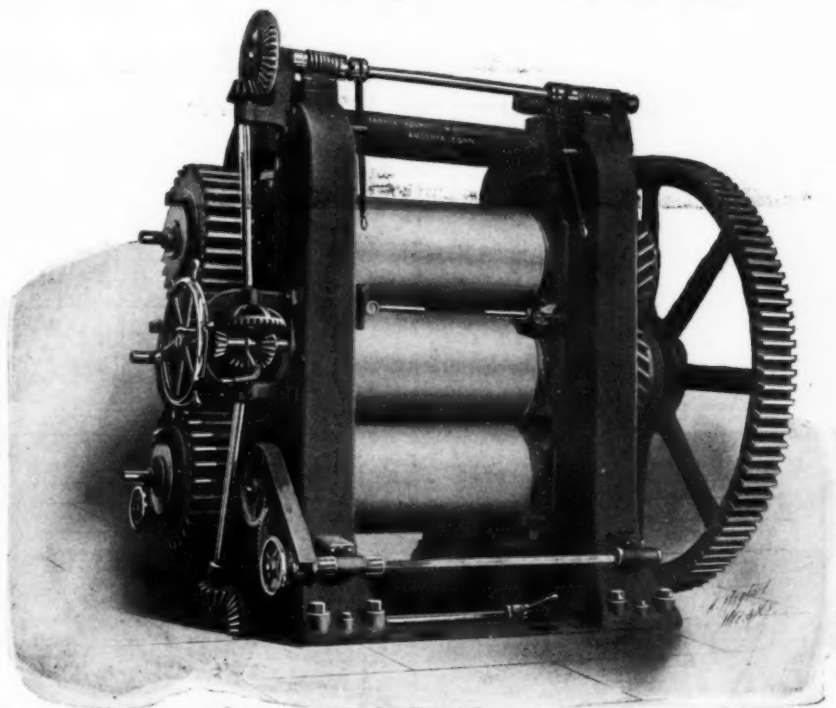
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HYDRAULIC PRESSES, all sizes, any number of
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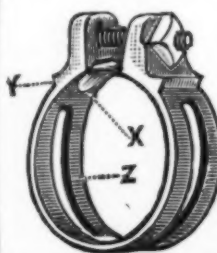
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Manufacturers of Rubber MachineryAutomobile, Bicycle and Steam Jacketed Vehicle Tire
Moulds a Specialty*Mention The India Rubber World when you write.*Established
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CUTTING DIES
of Every Description
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apparatus, tools and ingredients for tapping rubber plants
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High Grade Reclaimed Rubber

Our brand "Viking" when cured with 6 per cent. of Sulphur will stretch from 2 inches to 9½ inches, and when tested according to the "Master Car Builder's" specifications 2 inches will stretch to 8 inches with a permanent elongation of ¼ inch.

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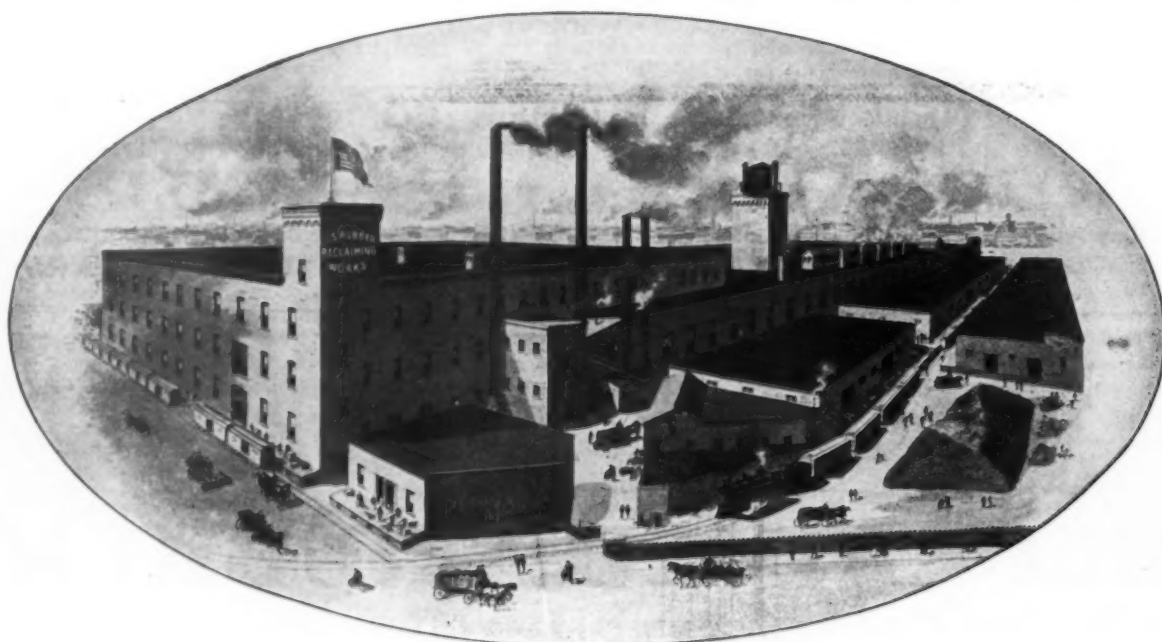
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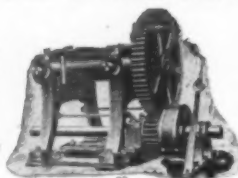
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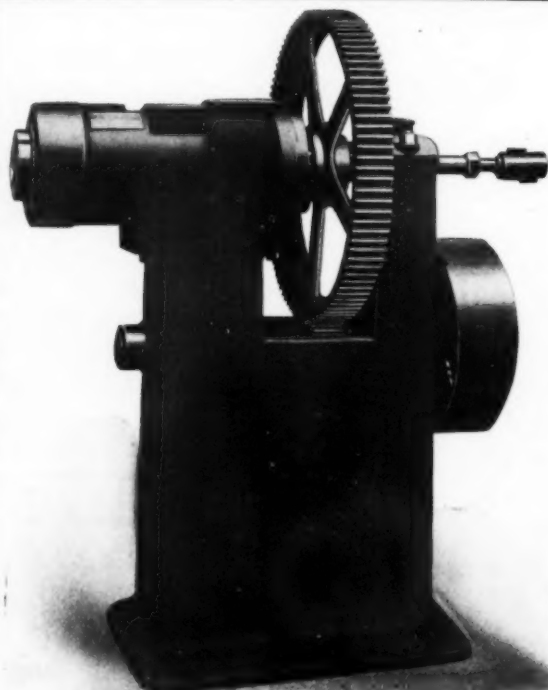
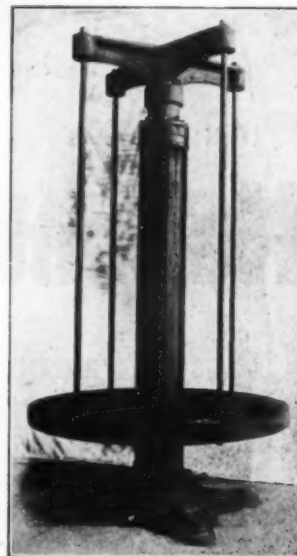
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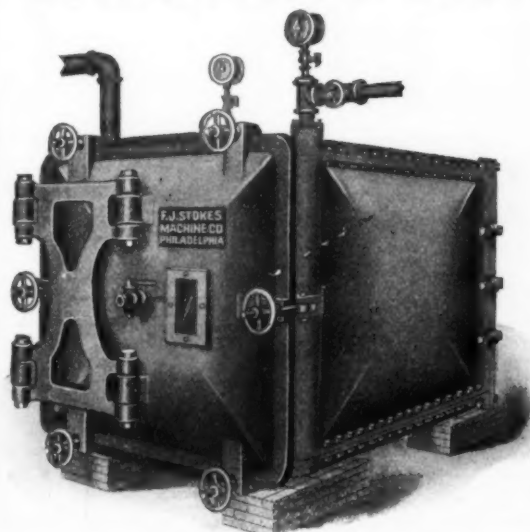


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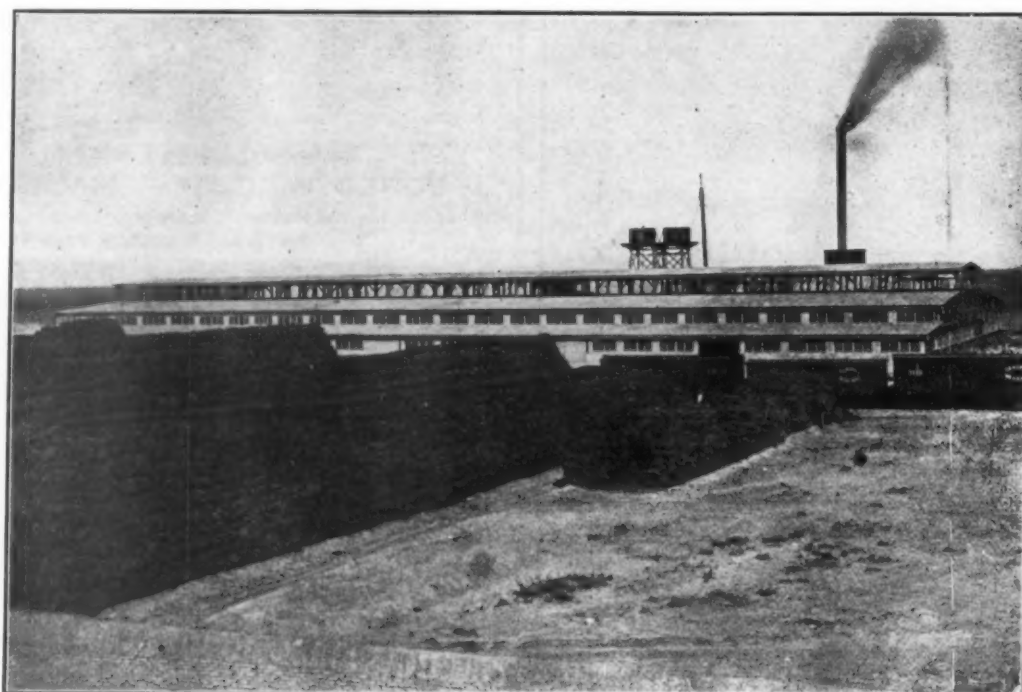
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Mechanical Goods Generally.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Hose & Rubber Co., Boston.
Bower Rubber Co., San Francisco, Cal.
Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Chicago Rubber Wks., Chicago.
Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
Continental Caoutchouc & Guttapercha
Co., Hanover, Germany.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
The Dermatine Co., London.
Dunlop Tire & Rubber Goods Co., To-
ronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Fire Hose Mfg. Co., New York.
Federal Rubber Co., Milwaukee, Wis.

Mechanical Goods—General.—Continued.

B. F. Goodrich Co., Akron, O.
Guth Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co., Toronto.
Home Rubber Co., Trenton, N. J.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., New York.
National India-Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Baiting & Packing Co., N. Y.
New York Rubber Co., New York.
North British Rubber Co., Ltd., Edinburgh.
Peerless Rubber Mfg. Co., New York.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Springfield Tire & Rubber Co., Springfield, Ohio.
Jos. Stokes Rubber Co., Trenton, N. J.
Trenton Rubber Mfg. Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.
Western Rubber Co., Goshen, Ind.
Abrasive, Polishing Wheels and Blocks.
Springfield Tire & Rubber Co., Springfield, Ohio.
Air Brake Hose.
Boston Belling Co., Boston-New York.

Air Brake Hose—Continued.

Boston Woven Hose & Rubber Co.
 Canadian Rubber Co. of Montreal.
 Acme Rubber Mfg. Co. Trenton.
 B. F. Goodrich Co. Akron, O.
 Gutta Percha & Rubber Mfg. Co., N. Y.
 The Gutta Percha & Rubber Mfg. Co.
 of Toronto, Ltd.
 Home Rubber Co., Trenton, N. J.
 N. J. Car Spring & Rubber Co., Jersey
 City.
 New York Belting & Packing Co., N. Y.
 Peerless Rubber Mfg. Co., New York.
 Republic Rubber Co., Youngstown, O.
 Revere Rubber Co., Boston-New York.
 Voorhees Rubber Mfg. Co., Jersey City.
Belting (Canvas).
 Boston Woven Hose & Rubber Co.
 Canadian Rubber Co. of Montreal.
 Eureka Fire Hose Mfg. Co., New York.
 The Gutta Percha & Rubber Mfg. Co.
 of Toronto, Ltd.
 Peerless Rubber Mfg. Co., New York.
 Revere Rubber Co., Boston-New York.
Billiard Cushions.
 Boston Belting Co., Boston.
 Canadian Rubber Co. of Montreal.
 Continental Rubber Works, Erie, Pa.
 B. F. Goodrich Co., Akron, O.
 Gutta Percha & Rubber Mfg. Co., N. Y.
 Manhattan Rubber Mfg. Co., New York.
 Mattison Rubber Co., Lodi, N. J.
 New York Belting & Packing Co., Ltd.
 New York Rubber Co., New York.
 Revere Rubber Co., Boston-New York.
Blankets—Printers'.
 Peerless Rubber Mfg. Co., New York.
 Boston Belting Co., Boston.
 Canadian Rubber Co. of Montreal.

Blankets—Printers'.—Continued.

B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hodgman Rubber Co., New York.
Gustave Kusch, New York.
Revere Rubber Co., Boston-New York.
Voorhees Mfg. Co., Jersey City.

Brushes.

Boston Woven Hosi & Rubber Co.
C. J. Bailey & Co., Boston.
Springfield Tire & Rubber Co., Springfield, Ohio.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.

National Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Carriage Co., Providence, R. I.

Carriage Mats.

Continental Rubber Works, Erie, Pa.
Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hosi & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co. of Toronto, Ltd.

RUBBER BUYERS' DIRECTORY—Continued.

Carriage Mats.—Continued.

Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Cord (Pure Rubber).

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Davol Rubber Co., Providence, R. I.
Dayton Rubber Mfg. Co., Dayton, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Force Cups.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Hodgman Rubber Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
Acme Rubber Mfg. Co., Trenton.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
New York Belting & Packing Co., N. Y.

Fruit Jar Rings.

Acme Rubber Mfg. Co., Trenton.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
New York Belting & Packing Co., N. Y.

Fuller Balls.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.

National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gasket Tubing.

Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New Jersey Car Spring & Rubber Co.
Rever Rubber Co., Boston—New York.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Dayton Rubber Mfg. Co., Dayton, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Rever Rubber Co., Boston—New York.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Wire Wound.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crute Co., Sharon Center, O.

Hose Pipes, Nozzles, Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Mfg. Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Hose Linings.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
New York Belting & Packing Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

Cotton and Linen.
Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Mfg. Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
A. Schrader's Son, Inc., New York.

Hose Bands, Straps & Menders.

Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Lawn-Hose Supporters.

O. J. Bailey & Co., Boston.

Lawn Sprinklers.

W. D. Allen Mfg. Co., Chicago.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston—New York.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston—New York.

Mould Work.

(See Mechanical Rubber Goods.)
H. O. Canfield Co., Bridgeport, Ct.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faulstich Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Oil Well Supplies.

Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Revere Rubber Co., Boston—Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Packing.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.

Paper Machine Rollers.

Boston Belting Co., Boston—New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Pump Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York.
Mattson Rubber Co., Lodi, N. J.
Massachusetts Chemical Co., Walpole, Mass.

Rolls—Rubber Covered.

Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Sewing Machine Rubbers.

Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Canadian Rubber Co. of Montreal.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.
Mattson Rubber Co., Lodi, N. J.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston—New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Massachusetts Chemical Co., Walpole, Mass.

RUBBER BUYERS' DIRECTORY—Continued.

Stair Treads—Continued.

National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston—New York.

Tiling.

Canadian Rubber Co., of Montreal, Ltd.
Continental Rubber Works, Erie, Pa.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring and Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

(See Mechanical Rubber Goods.)
American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Mattson Rubber Co., Lodi, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston—New York.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.

(See Mechanical Rubber Goods.)
Jenkins Bros., New York-Chicago.
Mattson Rubber Co., Lodi, N. J.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Continental Rubber Works, Erie, Pa.
Dayton Rubber Mfg. Co., Dayton, O.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co., Lodi, N. J.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers.

Bandages.

Bulbs.

Nipples.

Syringes.

Water Bottles.

Druggists' Sundries, Generally.

American Hard Rubber Co., New York
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Canton Rubber Co., Canton, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
L. & M. Rubber Works, Canton, Ohio.
Luzerne Rubber Co., Trenton, N. J.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Finger Cots.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.

Gloves.

Canadian Rubber Co., of Montreal.
Daval Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Rubber Products Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co., of Montreal.
Davidson Rubber Co., Boston.
H. O. Canfield Co., Bridgeport, Ct.
Daval Rubber Co., Providence, R. I.
Household Rubber Co., Youngstown, O.
Luzerne Rubber Co., Trenton, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheatings.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Shower Bath Sprinklers.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.
N. Tire Rubber Sponge Co., Chicago.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Eric Rubber Works, Erie, Pa.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Sons, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co., of Montreal.
Davidson Rubber Co., Boston.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Cushions.

Metropolitan Air Goods Co., Reading, Mass.

Air Goods (Rubber).

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Metropolitan Air Goods Co., Reading, Mass.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co., of Montreal.
Metropolitan Air Goods Co., Reading, Mass.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.
Daval Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Calendering.

Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Acme Rubber Mfg. Co., Trenton, N. J.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.

Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Gutta Percha & Rubber Mfg. Co., of Toronto.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenettes.

Cravenette Co., Ltd.
Diving Apparatus.
A. Schrader's Son, Inc., New York.
Hodgman Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co., of Montreal.
Plymouth Rubber Co., Stoughton, Mass.

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Cravenette Co., Ltd.
Rubber Coated Cloths.
Mechanical Fabric Co., Providence, R. I.

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Canadian Rubber Co., of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., of Toronto.
Hood Rubber Co., Boston.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Continental Caoutchouc & Gutta-percha Co., Hanover.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Massachusetts Chemical Co., Walpole, Mass.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Tire & Rubber Co., Springfield, Ohio.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co., of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Daval Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., Lodi, N. J.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

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Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mattson Rubber Co., Lodi, N. J.
Tyer Rubber Co., Andover, Mass.

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Acme Rubber Mfg. Co., Trenton, N. J.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

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Canadian Rubber Co. of Montreal.
Luzerne Rubber Co., Trenton, N. J.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

Acme Rubber Mfg. Co., Trenton, N. J.
The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.
National India Rubber Co., Providence.

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Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Walpole, Mass.

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Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.

B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

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Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
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B. F. Goodrich Co., Akron, O.
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Massachusetts Chemical Co., Walpole, Mass.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

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Maywald, F. J., New York.
Stephen P. Sharples, Boston, Mass.

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Akron Rubber Engineering Co., Akron, O.
M. P. Fillingham, New York.

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Tuma River Plan. Co., New York.

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J. P. William & Bros., Heneratoda, Ceylon.

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Robert L. Crooke, New York.

Stair Nosings.

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Hogson & Pettis Mfg. Co., New Haven.

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John E. Thropp & Sons Co., Trenton, N. J.

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New England Butt Co., Providence, R. I.

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Birmingham Iron Foundry, Derby, Conn.
David Bridge & Co., Castleton, Manchester, Eng.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.

A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Chucks (Lathe).

Hogson & Pettis Mfg. Co., New Haven.

Churns.

American Tool & Machine Co., Boston.

Clutches.

Farrel Foundry & Mach. Co., Ansonia, Conn.

Crackers.

Birmingham Iron Foundry, Derby, Conn.

Devulcanizers.

Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.

Dies.

John J. Adams, Worcester, Mass.
Boston Die Co., Boston.
Bridgewater Machine Co., Akron, Ohio.
Hogson & Pettis Mfg. Co., New Haven.

Doubling Machines.

American Tool & Machine Co., Boston.

Drying Machines.

David Bridge & Co., Castleton, Manchester, Eng.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Conn.
F. J. Stokes Machine Co., Phila., Pa.
Textile-Finishing Machinery Co., Providence, R. I.

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Textile-Finishing Machinery Co., Providence, R. I.

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Hogson & Pettis Mfg. Co., New Haven.

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Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
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Farrel Foundry & Mach. Co., Ansonia, Conn.

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Birmingham Iron Foundry, Derby, Conn.
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Farrel Foundry & Mach. Co., Ansonia, Conn.

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John Royle & Sons, Paterson, N. J.

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Middlesex Last Co., Boston.

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A. Adamson, Akron, O.

Lathes—Jar Ring.

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Hogson & Pettis Mfg. Co., New Haven.

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Farrel Foundry & Mach. Co., Ansonia, Conn.

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Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, N. Y.
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Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Perrin & Co., Chicago Ill.
William R. Thropp, Trenton, N. J.
Williams Foundry & Machine Co., Akron, Ohio.

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Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, N. Y.
Farrel Foundry & Mach. Co., Ansonia, Conn.

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Rollers (Hand).

Hogson & Pettis Mfg. Co., New Haven.

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New England Butt Co., Providence, R. I.

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Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.

Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

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Bridgewater Machine Co., Akron, Ohio.
Hogson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).

Hogson & Pettis Mfg. Co., New Haven.

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New England Butt Co., Providence, R. I.

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Williams Foundry & Machine Co., Akron, O.

Tubing Machines.

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John Royle & Sons, Paterson, N. J.
Williams Foundry & Machine Co., Akron, Ohio.

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Joseph P. Devine Co., Buffalo, N. Y.
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Vulcanizers.

Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, M. P. Tillingham, New York.
John E. Thropp's Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Washers.

Birmingham Iron Foundry, Derby, Conn.
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Farrel Foundry & Mach. Co., Ansonia, Conn.
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Golden and Crimson.

Joseph Cantor, New York.
Golden and Crimson.
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Barytes.

Avery Chemical Co., Boston.

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Avery Chemical Co., Boston.
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Black Hypo.

Joseph Cantor, New York.
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Typke & King, London, England.

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Oxford Tripoli Co., New York.
George W. Speaight, New York.
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Typke & King, London, England.
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Avery Chemical Co., Boston.

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Derby Rubber Co., Derby, Conn.

Eastern Rubber Co., New York.

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Manufactured Rubber Co., Phila., Pa.

Manufacturers' Co., Phila., Pa.

New Jersey Rubber Co., Lambertville, N. J.

Pegusac Rubber Co., Butler, N. J.

Philadelphia Rubber Works, Philadelphia.

Rickaby Rubber Mfg. Co., South Framingham, Mass.

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S. & L. Rubber Co., Chester, Pa.

U. S. Rubber Reclaiming Works, N. Y.

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Massachusetts Chemical Co., Walpole, Mass.

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Meyer Bros., Philadelphia, Pa.

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J. Schuurmann, London.

Schwab & Co., Philadelphia.

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Wm. H. Scheel, New York.

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Typke & King, London, England.

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Battelle & Henwick, New York.

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Whiting.

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New Jersey Zinc Co., New York.

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Typke & King, London, England.

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National India Rubber Co., Bristol, R. I.

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The Indiana Rubber and Insulated Wire Co., Jonesboro, Indiana.

National India Rubber Co., Bristol, R. I.

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Boston Woven Hose & Rubber Co., Cambridge, Mass.

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Manhattan Rubber Mfg. Co., New York.

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National India Rubber Co., Bristol, R. I.

Revere Rubber Co., Boston, Mass.

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Trenton Rubber Mfg. Co., Trenton, N. J.
Rims, Wheel.

Goodrich Co., B. F., Akron, Ohio.

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Continental Rubber Works, Erie, Pa.

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Goodrich Co., B. F., Akron, Ohio.

Gutta Percha & Rubber Mfg. Co., Toronto.

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Kokomo Rubber Co., Kokomo, Ind.

Lake Shore Rubber Co., Erie, Pa.

North British Rubber Co., Ltd., Edinburgh, Scotland.

Pirelli & Co., Milan, Italy.

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Plymouth Rubber Co., Stoughton, Mass.

Republic Rubber Co., Youngstown, Ohio.

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Revere Rubber Co., Boston-New York.

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